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Most Effective Beam Pattern · · Greatly Simplified Mechanism · · Only ONE Lamp · · ONE Reflector · · ONE Motor

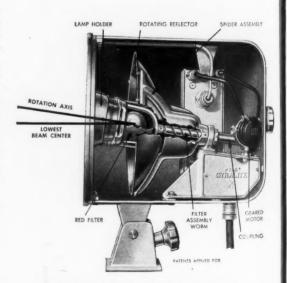
The mechanism and construction of the Multi-Purpose Gyralite is very simple and economical, with a minimum of moving parts, assuring exceptional reliability. There is only one lamp...one reflector... and one motor! The gyration of the beam is achieved by the rotation of the reflector which is directly connected to the shaft of the geared motor. The automatic color change is simply effected by reversing the direction of the motor. Since the motor and lamp-holder are stationary, there are no moving lead wires. Greatly simplified wiring utilizes only one relay switch, and all internal connections are factory made.

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MULTI-PURPOSE GYRALITE . . . with automatic color change. 16-inch reflector. 18-inch door glass. For built-in mounting on diesel locomotives.



MULTI-PURPOSE GYRALITE—Reflector in position to project beam on lowest center, parallel to track. Color filter forward enclosing lamp for red beam. Patents Pending.



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RAILWAY AGE

With which are incorporated the Railway Review, the Railway Gazette, and the Railway-Age Gazette. Name Registered in U. S. Patent Office.

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Published each Saturday by the Simmons-Boardman Publishing Corporation, Orange, Conn., with Editorial and Executive Offices at 30 Church Street, New York 7, N. Y., and 105 W. Adams Street, Chicago 3, III.

Washington 4, D. C.: 1081 National Press Building—Cleveland 13: Terminal Tower—Seattle 1: 1038 Henry Building—San Francisco 4: 300 Montgomery Street, Rooms 805-806—Los Angeles 14: 530 West 6th Street— Dallas 4: 2909 Maple Avenue. Samuel O. Dunn, Chairman. James G. Lyne, President. S. Wayne Hickey, C. Miles Burpee, H. H. Melville, C. W. Merriken, F. C. Koch, R. E. Thayer, H. E. McCandless, Vice-Presidents. John R. Thompson, Western District Sales Manager. J. S. Crane, Vice-President and Secretary. J. T. De-Mott, Treasurer. Ralph E. Westerman, Arthur J. McGinnis, Assistant Treasurers.

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Install "UNION" Mechanical Facing Point Locks on Spring Switches

FOR TRAILING MOVES ...

against the closed point, the "Union" Mechanical Facing Point Lock retains all the advantages of the spring switch. The leading wheels flex the switch points, causing the automatic unlock of the mechanism to permit the trailing movement—and the locking is restored after the train has passed.

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A built-in circuit controller for signal control checks that the switch is correctly positioned and locked; and through the point detector continuously checks that the switch points are in the correct position and have not been damaged.

The "Union" Mechanical Facing Point Lock prevents opening of the points in case of a broken spring in a spring head rod; and guards against shifting of the points under trains. Ask our nearest district office for detailed information.

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WEEK AT A GLANCE

WHY KEEP A COW? In this day and age of specialization and mass production, few people would find it either cheap or easy to go back to the colonial system of raising their own milk, eggs, meat and vegetables, making their own clothes or shoes, or even baking their own bread. Why. then, should they provide their own transportation on a private—and often amateur—basis, when efficient mass transportation produced by specialists is so readily available? Our leading editorial gives the answer—which is simply that, as a result of political manipulation, transportation by highway carries a deceptive price tag—one that shows a price far below the true cost.

ROLLER FREIGHT: The use of roller bearings on locomotives and passenger cars is a long way past the experimental stage. But so far, at least, the use of such bearings has made little headway in freight service. The practical and economic considerations in the application of roller bearings to freight cars were clearly and interestingly outlined to the Car Foremen's Association of Chicago a few weeks ago by Dr. Oscar J. Horger, chief engineer of the Timken Roller Bearing Company's Railway division. Dr. Horger's discussion is abstracted at page 42.

MORE TRACK CAPACITY—LESS TRAIN TIME: An illustrated article starting on page 30 describes how the Chesapeake & Ohio increased track capacity and saved train time on 133 mi. of its Pere Marquette District by a carefully worked out five-year program of relocating and extending sidings in a manner adapted to installation of C.T.C.

NEW U. P. DINERS: An illustrated article beginning on page 36 describes 17 new dining cars built by the American Car & Foundry Co. for the Union Pacific for use in that road's streamliner fleet.

RAILROAD-ARMY COOPERATION: In sharp contrast to at least one other government department—which shouldn't be too difficult to identify—the Army has given gratifying evidence of recognizing and appreciating the magnificent transportation job done by American railroads during World War II. The war, of course, is long since over—well, anyway, the shooting has stopped—but close cooperation between the railroads and the military authorities is still essential, and still continues. What this cooperation involves, and how it works, at a major port of embarkation, such as New York, is told in an article on page 33.

AN UNEXPECTED ALLY: One of this week's leading News stories is a report of the petition filed with the Interstate Commerce Commission by the Brotherhood of Locomotive Engineers for permission to intervene in the so-called "reparations cases" raised by that governmental agency known officially as the Department of Justice. We haven't,

unfortunately, always been able to agree with the B.L.E. or other railroad brotherhoods; we think many of their actions and proposals are detrimental to the long-range interests of their own members. But we like to give credit where credit is due—and in this case we think the B.L.E. is on the right track, for its own members and for the railroads with whose welfare that of the engineers is so closely allied.

GREATEST CAPITAL OUTLAY: One and one-third billion dollars is a lot of money—anywhere, any time. But that is just about what the Class I railroads of the United States spent in 1948 in capital expenditures for equipment and other improvements to railway property, to provide better service and to hold costs—and consequently rates—down to the lowest possible levels. Details of these enormous expenditures appear in the News section.

GOVERNMENT FREIGHT CARS? Col. J. Monroe Johnson, director of the Office of Defense Transportation, has just advanced an interesting proposition that may well bear careful thought. He wants the government to buy, "as part of armament," all the steam locomotives being scrapped by the railroads, and 550,000 new freight cars, to be sold or leased to the railroads, or stored for defense purposes. For details, see the News section.

WE HOPE YOU LIKE IT: In this issue, for the first time, our editorials, feature articles, and news are set in a new type face—selected after careful consideration and consultation with one of New York's leading typographical experts, for pleasing appearance and improved readability. We hope you like it.

LET'S FOLLOW CANADA'S EXAMPLE: As reported in the week's news, the Canadian government has abolished, as of March 23, that country's 15 per cent wartime tax on transportation of persons. Here's hoping our own lawmakers take the hint, and follow our good neighbor's example.

KEEPING DOWN MAINTENANCE COSTS: With material prices high, with wages high and going higher, and with a 40-hr. week for maintenance-of-way employees to become effective within a few months, railway engineering and maintenance officers have a difficult problem in keeping expenditures down and standards up. That problem was given thorough consideration at the recent meeting of the American Railway Engineering Association in a symposium in which three top-ranking engineering officers presented three possible solutions to the problem—increased mechanization, heavier rail, and roadbed stabilization. Beginning on page 38, we present abstracts of discussions of those points by, respectively, S. R. Hursh, P.R.R., F. R. Layng, B.&L.E., and T. A. Blair, A.T.&S.F.

Enroll Now!

NEW ELECTRO-MOTIVE
PURCHASES AND STORES SCHOOL

O ASSIST customer railroads to order, stock and handle Diesel parts more efficiently and economically, a new five-day course for your Purchases and Stores personnel has been added to the educational program offered by our Diesel Locomotive Training Center.

Those attending will be thoroughly schooled in the most modern methods of parts supply. They will be given a complete understanding of the functions of the locomotive and its component parts, followed by instruction in better organization of parts handling.

This will include discussions and demonstrations on the newest methods of parts procurement, warehousing, packaging, order processing and shipping conducted by our people in charge of these operations. Facilities of our Repair Department for reconditioning and repair of locomotives and components will be shown in detail.

This training program is open to all of our customers without charge. Railroad management is invited to make the course available to as many of its people as possible. Application for attendance should be directed through official railroad channels to Educational Director, Locomotive Training Center, Electro-Motive Division, General Motors Corporation, La Grange, Illinois.

Since its start in 1938 the Diesel Locomotive Training Center at La Grange has given instruction to more than 4,500 railroad supervisors. In addition, 53,000 people have received training in our School Car classes.

This continuous program of education is just one of the many plus values that go with your purchase of General Motors locomotives and genuine Electro-Motive parts.

CLASS SCHEDULE FOR 1949

Classes are conducted Monday through Friday on the following dates:

Apr	118—April	22	Aug.	15-Aug.	19
May	2—May	6	Aug.	29-Sept.	2
May	16-May	20	Sept.	19—Sept.	23
June	13—June	17	Oct.	3-Oct.	7
June	27—July	1	Oct.	17—Oct.	21
July	18—July	22	Oct.	31-Nov.	4
Aug.	1—Aug.	5	Nov.	14-Nov.	18
		Doc	5-Dec 0		

ELECTRO-MOTIVE



DIVISION OF GENERAL MOTORS LA GRANGE, ILL.

Home of the Diesel Locomotive

RAILWAY AGE

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DECEPTIVE PRICE-TAGS ON TRANSPORTATION SERVICES

The American people, although few of them appear to realize it, are confronted with a "railroad problem" of pressing immediacy, involving dangerous consequences if they do not discern and apply a correct solution. The obverse of this assertion is also true, namely, that the railroads are faced with a serious "people problem." That is to say, it is scarcely likely that the people are going to summon up the intellectual and moral energy needed to solve their "railroad problem" unless the railroads first arouse their own sense of stewardship to sufficient intensity to enable them to awaken the people to the danger inherent in the present chaos of the transportation situation.

Pathological Behavior

Suppose people, in wholesale numbers, should suddenly cease buying milk from the great dairy companies and that each family, instead, should purchase a cow or goat, tethering the source of the family milk supply out to pasture in the nearest public park. Or suppose people should suddenly cease using their telephones or the telegraph and mail services, and take to maintaining flocks of carrier pigeons instead. Such behavior would put all the psychiatrists on 24-hour daily duty.

Behavior just as pathological as either of the foregoing examples, however, is occurring on an

unprecedented scale in the transportation businessthat is, the diversion of freight traffic from movement by railroad, where 5 men can move 5,000 tons, to highways where the ton-mile output of 5 men is seldom more than 75 tons. Surely the objectives of economic progress, of a higher standard of living for everybody, of extending charity to Europe and Asia, and of arming the country against aggression, are not being advanced-but are being thrown into serious reverse—when efficient transportation work is shifted away from economical tools to those which are less than 2 per cent as efficient.

This morbidly anti-economic development has not come about, of course, because some thousands of shippers have suddenly become demented. On the contrary, where they have shifted traffic from the more efficient to the less efficient agency, they usually have done so because of deceptive price-tags-highway transportation in all cases being tagged at far less than cost, because no ad valorem taxation is levied on highway plant, as it is on railway plant; and because a large part of the cost of building and maintaining the highways is paid by general taxpayers and non-commercial users.

It is the system of comparative pricing of the several services of transportation which is crazy, not the purchasers of transportation-but the result is just the same as if shippers themselves were mentally afflicted. The crazy system of comparative

cost-allocation and pricing in transportation is the result of politics, that is, the operation of pressure groups, a contest in which energetic mischief always triumphs over languid virtue. Arithmetic is, of course, always the victor in the long run. If America goes too far in doing its transportation in the most costly way, that folly will be paid for, in the end, by the country's loss of world economic leadership and perhaps also by its loss of military supremacy. If that evil day comes, there will be no surplus tax money left with which to pay the freight bills of politically favored shippers—and all transportation service, with free rides available no longer, will betake itself perforce to the channels of maximum economy.

The prodigal, when reduced to sharing the husks with the swine, will usually have acquired from his misery enough wisdom to turn his steps, at length, toward his father's house. Using a little foresight and intelligence, he could acquire the same degree of wisdom vicariously, learning from the experience of others instead of insisting upon suffering it himself.

The men in positions of leadership on the railroads are fully aware of the situation as outlined in the foregoing, but they have so far had, at best, only moderate success in conveying an understanding of the issue to those who can correct it, namely, the American people—especially leaders of other business, who are the individuals specifically responsible for this country's imbecilic policy of putting falsified price-tags on its transportation service. It may be that nothing the railroads can do will be sufficient to awaken the consciousness and the conscience of the leaders of other business to the danger of the national safety and to the retention of private enterprise from the course which these business leaders are fostering or tolerating in transportation. But the effort the railroads have made so far to sound the tocsin-a few praiseworthy individuals excepted-has not proportioned the decibels to the degree of the peril.

Trustees of the Public Interest

The leaders of the railroad industry are not just trustees of the owners of the properties alone-they are also trustees of the public interest in the maintenance of efficient and dependable railroad service. They have the moral and patriotic duty, and not just the motive of self-interest, to specify the minimum changes in public policy which are required to establish the industry upon a sound financial footing of adequate capital supply from private sources; and the further obligation to "sell" this honest and moderate program to the American people with all the skill and energy which they can command. Meantime, since no shortage of railroad capacity now exists, no customer offering remunerative traffic should be permitted to divert his business, offering the valid excuse that the railroads are giving him less rapid, less

dependable and less convenient service than it is within their reasonable power to afford.

There is no more reason to fear the outcome of a courageous all-out fight on this issue than there was for this country to be afraid when it confronted Germany and Japan, or than there now is to quail before the might of the Soviet tyranny.

LUBRICATION OF CAR JOURNALS

One of the problems facing the railroads at the present time is the lubrication of journal bearings on freight cars. The standard plain-bearing journal box which depends upon waste packing for its lubrication has been in use from time immemorial and nothing has yet come into the picture, as a substitute, which railroad men are willing to talk about out loud. But the history of the waste-packed plain-bearing journal box indicates that it has not been quite able to keep up with the demands which the increasing severity of freight-train service has imposed upon it.

This statement will probably be questioned. It is justified by the fact that successful operation of the waste-packed plain-bearing journal box depends upon a degree of attention which, throughout the years, the railroads have never been able to maintain consistently over long periods. It's history, at least during the past 15 or 20 years, has been one of a succession of hot-box epidemics, each cured by resort to extraordinary attention to the condition of journals and bearings, the character of repacking attention, and frequent inspection and servicing. The subsidence of each epidemic has been followed by a return to a level of attention which can be kept up without extraordinary supervision.

Can it be said that a device which will not maintain a satisfactory level of service without frequently recurring periods of abnormal attention is fully equal to its task?

Elsewhere in this issue is an article pointing out some of the economic results of this lack of adequacy on the part of the standard type of freight-car journal bearing. This article's indictment of the standard device is undoubtedly justified by the facts. The economics of the alternative, as it appears at the present time, however, does not provide a convincing answer without an approach to the problem which has not ordinarily, if ever, been made.

Just what would be the economic effects of the reduction of the disadvantages of the plain-bearing waste-packed journal box which could be expected from a substitution of a type of journal bearing free from these disadvantages? The author of the article suggests some of these effects, but before an economic balance can be struck between the present standard and proposed substitutes, a closer study must be

made of the problem than any of which the results are yet generally available.

The great advantage of the standard plain-bearing journal box with waste packing is its simplicity and low first cost. Are the disadvantages of this type of bearing in service, which from now on are likely to retard progress in the improvement in freight service in certain directions, sufficiently great to offset the high first cost of roller-bearing journal boxes? Without a more careful study of this question than any of which the results have yet been made public, is any satisfactory answer to this question now available?

LESS—BUT MORE EFFICIENT—MAINTENANCE

One of the biggest incentives ever given engineering and maintenance officers to reduce the number of man-hours required in roadway and structures work is the recent wage-and-hour agreement under which the non-operating employees are to have a 5-day, 40-hr. work week. Many labor-saving measures that have long been desirable, but not put into effect for one reason or another, now become imperative.

Effective next September 1, non-operating employees will work eight hours less each week, with no reduction in pay. As of last October 1, they received a seven-cents-an-hour wage increase. Unless counter economy measures are taken, these changes in hours and rates could cost the railroads an estimated additional \$640,000,000 annually. The railroads, in the face of declining traffic and earnings, don't have that kind of money to distribute. These potential cost increases must be precluded to the fullest possible extent.

The problem would be simple if the railroads could get along with one-sixth less maintenance of their properties. But this is not the answer, particularly as most roads have been steadily piling deferred maintenance of their fixed properties on deferred maintenance already accumulated during and since the war. And the railroads cannot expect an increase in the efficiency of their employees in any way commensurate with the shorter work week.

During a period of adjustment to the new situation, the roads no doubt will have to employ some additional labor, while further deferring some needed work and striving for increased efficiency on the part of employees. But the only feasible long-term solution lies in: (1) The adoption of standards of construction that will require less frequent renewals and less routine maintenance work; and (2) the further development and more intensive use of methods that will increase production per man-hour. In

these two measures, the railroads have highly effective weapons against excessive man-hour costs.

There are those who visualize the mechanization of maintenance operations to date as only in its infancy, who see in the offing the complete mechanization of section forces and the development of machines for large operations that will dwarf in output those already being used. Others, with a great deal of logic, emphasize the adoption of higher standards of construction - in heavier rail, more durable ties, newer and stronger track fastenings, better ballast, roadbed stabilization, etc.-to reduce the amount of periodic maintenance required. Through permanence of construction, they would first eliminate the necessity for much work now performed, and then, through the much more intensive use of improved machines, drastically reduce the remaining man-hour requirements.

There is nothing anti-social or anti-labor in either of these proposals. They should have been effected more widely long ago, and they become imperative with the abruptly increased man-hour cost. Railway officers should put their heads together—at once—and, with boldness and imagination, put into effect, at the earliest possible date, those immediate and long-range measures that will most effectively meet this challenge.

The Muzzled Ox

We regret that the annual reports for 1948 of the Pennsylvania Railroad and the General Motors Corporation have reached the news columns at the same time. Their simultaneous appearance seems to force an editorial comparison. And whatever we do with that, somebody won't like it. What makes it worse is that differences in accounting forms prevent a neat tabular comparison without a long tail of explanatory footnotes. Nevertheless, here goes.

Gross revenues of this railroad were but a few dollars short of \$1 billion. Apparently it "turned over" its capital investment at the rate of about once in three years, which rate conforms to the historically slow turnover of railroad capital. The report states that the year's net operating earnings were equivalent to 2.37 per cent on the company's investment in transportation property. That was, of course, better than the 1.13 per cent of the year before, but it would certainly not attract the favorable attention of many owners of "venture capital."

With property investment and net current assets of \$1,819 million, General Motors Corporation's net sales for the year were \$4,702 million. That is, it was able to turn its capital over two and a half times in one year. As a result, net operating earnings were 23.7 per cent on invested capital, though they were less than 10 cents of the sales

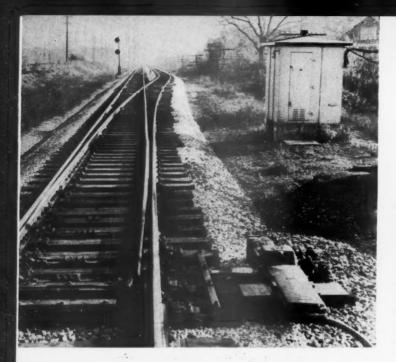
dollar. . . .

As things are, the making of automobiles and trucks is a far more attractive business than hauling freight and passengers. Judging solely from the compensation it gets, one might suppose we all considered the former more important to the general welfare than the latter. But such an inference would be risky.

an inference would be risky.

If memory serves, it was Moses who said: "Thou shalt not muzzle the ox when he treadeth out the corn." But we do.

-The Wall Street Journal



MODERN SIGNALING

The Chesapeake & Ohio (Pere Marquette district) has completed a well-planned five-year program of improvements on 119.2 mi. of single track and 13.9 mi. of double track on its Chicago-Petoskey division between Porter, Ind., and Lamar, Mich. (the west entrance to the terminal at Grand Rapids). While no changes were made in the grade or alinement of the main track, the rail, ties and rock ballast are all new throughout. The major change in adapting the division to more efficient operation of trains was the modernization of the sidings with respect to length and location, while reducing the number of sidings from 25 to 13.

The final phase of the program was to install power switch machines and signaling to form complete centralized traffic control, thereby providing means to authorize train movements by signal indication, rather than by timetable and train orders. The 84.4-mi. stretch of C. T. C. between Lamar and St. Joseph is controlled by a machine in the dispatcher's office at Waverly, the junction with the branch lines to Muskegon and Allegan. The 48.6 mi. of C. T. C. between St. Joseph and Porter are controlled by a machine at New Buffalo which is handled by an operator who works under the direction of the dispatcher at Waverly. The schedules include six

Top—New long turnouts with switches operated by power machines are part of the improvement program

Left—Train movements are authorized by searchlight type signals at the ends of sidings, under the control of the C.T.C. system

Below—The centralized traffic control machine is located in the dispatcher's office at Waverly



ON A DIVISION

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Five-year program of relocating and extending sidings, adapted for installation of centralized traffic control on 133 mi. of the P.M. District of the C. & O., increases track capacity and saves train time

passenger trains, eight manifest freights and two local freights. Extra trains are operated as required, so that the trains vary from about 20 to as many as 30 daily.

Benefits of C.T.C.

The results in saving train time and improving operations obtained with the completion of this coordinated program of improvements embracing the whole division agree with those calculated in advance. Chief Dispatcher C. A. Etchason explains that when switches were operated by trainmen, about 40 min. ahead of the time for a passenger train was required for a freight train to depart from a siding, proceed to the next siding and get into the clear for the passenger train. Whenever the time available was close to the 40-min. limit the freight crew would not proceed. If the passenger train were running late, and the freight crew was not so informed, even more time was lost. Now, with power switch machines and signals at these switches under C. T. C. control, a movement from one siding and into the next can be made in about 15 min. less time than previously.

Furthermore, as the lamps on the track diagram of the C. T. C. machine show the progress being made by each train, the dispatcher can control the signals to direct a freight train to keep moving, often advancing it one or more sidings for a close meet with a following passenger train. Similarly, meets between opposing trains are made on very close time, and because the sidings are long, meets frequently are accomplished without either train being required to stop.

As stated by C. J. Millikin, assistant general manager: "We cannot explain delays to the shipper and consignee in terms of broken drawbars. Therefore, the advantages of the new sidings and C. T. C., in getting trains over the road on time and to make up time that may be lost, are important factors in securing and holding important freight traffic."

Sidings Reduced from 25 to 13

Before this five-year program was undertaken there was a siding at nearly every town, spaced an average of 5.3 mi. apart. Most of these 25 sidings had capacities ranging from 45 to 85 cars. Experience on other projects showed that, with centralized traffic control, the number of sidings could be cut approximately in half, providing longer sidings, located on a time-dis-

tance basis, were made available. A major portion of the planning, therefore, had to do with the relocation of sidings, consideration being given: (1) to providing sidings about 2 mi. long—the idea being that sidings are not to "hold" trains but rather, if practicable, to keep them moving while making meets; (2) to spacing the sidings, if possible, on a time-distance basis; (3) to locating the new sidings or extensions of old ones where construction costs for fills, cuts, bridges and culverts would be a minimum; (4) to locating the sidings where there were no streets or highways at which standing trains would have to be cut for crossings; and (5) to locating each siding, if possible, so that a starting train will be favored, rather than handicapped, by the grade.

To benefit by the experience of all concerned, numerous conferences were held, and inspection trips were made by groups including the assistant general manager, division superintendent, signal engineer and superintendent of telegraph, division engineer, road foreman of engines, trainmaster and chief dispatcher. Out of these conferences was developed the five-year program now completed. Four entirely new sidings, each about 2 mi. long and in open country away from towns, were built at Hudsonville (west of the town), Wells (west of Fennville), Kirk (between Watervliet and Hartford) and Livingston (between Stevensville and Bridgeman). Long extensions were made to the sidings at Grand Junction, Gross and Michigan City, so that each is now approximately 2 mi. long. The siding just east of Porter is 6,500 ft. long.

From New Buffalo a subdivision extends 35.2 mi. to La Crosse, Ind., to connect with the Chicago-Cincinnati line of the Chesapeake district of the Chesapeake & Ohio. A yard at New Buffalo is used for setting out and picking up cars, and as a terminal point by some trains which run between Grand Rapids and New Buffalo. There was formerly about 2.5 mi. of double track through new Buffalo, but eastward trains lost time when running at reduced speed through the two turnouts at the ends of the double track. When a train on the eastward main was taking coal or water, a following train could not be moved into the station area. For these reasons, when C. T. C. was installed the eastward main track through New Buffalo was converted to a siding, leaving the westward track as a singletrack main line.

Counting New Buffalo, the C. T. C. project included power switches and signals at both ends of 12 sidings and at the east end of the siding at Porter, the west



Fig. 1. Map showing location of junctions and sidings between Grand Rapids and Porter

end being in the interlocking where the tracks of the Pere Marquette district connect with other roads used jointly between there and Chicago. The C. T. C. also includes power switches and signals at the ends of double track at Grandville, Riverside, Benton Harbor, St. Joseph and Vine, as well as three crossovers, two between the main track and siding at Waverly, and one between the two main tracks at Grey.

Sidings were discontinued at Vriesland, Hudsonville, Zeeland, New Richmond, Fennville, Pullman, Bridgeman, Breedsville, Hartford, Watervliet and Coloma; and two sidings were discontinued at Grand Junction and at Michigan City. At some points sidings were shortened and left in place to be used as house tracks. In several instances, as at Fennville, Hartford and Coloma, one of the existing main track switches and a considerable portion of the old siding were removed. At Watervliet, where there are several coal yards and industries, the spurs are now connected to the old siding instead of to the main track. Also, at Zeeland, the old siding was extended to connect with all industry spurs which formerly ran off the main track.

A general advantage is that there are now 15 fewer main track switches than there were five years ago-

an important element in reducing the costs of new rail and track maintenance. Secondly, the local freight train can work on the sidings, clear of the main track, to serve industries which may require up to 2 hr. or more each day. Each hand-throw main-track switch leading to house and industry tracks is equipped with an electric lock. A Hayes derail, placed at the clearance point on the turnout, is pipe-connected to and operated by the switch stand.

Operation on Double Track

This Lamar-Porter territory includes three sections of double track: 2.5 mi. between Lamar and Grandville; 7.4 mi. between Riverside and Benton Harbor; and 3.9 mi. from St. Joseph up a grade westward to Vine. In these sections, both tracks are signaled for train operation in both directions. In the Benton Harbor industrial area between Riverside and St. Joseph drawbridge, switch engines work day and night serving industries. Formerly these engines had to get in the clear whenever a through train was to move on the track on which they were working. With the new system, if a switcher is working on one of the main tracks, a through train in either direction can be run around it over the other track. This saves a lot of time in switching operation.

On the double track between Riverside and St. Joseph, there was formerly a hand-throw crossover between the two main tracks 18,966 ft. west of Riverside, used mainly by switch engines. As a part of the program, this crossover was reversed and moved 4,437 ft. eastward, and power switch machines and C. T. C. signals were installed. At its new location—named "Grey"—the crossover not only can be used as well as before in switching movements, but also is available, under C. T. C. control, for run-around train movements. The section of the north track between this crossover and Riverside can be used as a siding when the portion between Grey and St. Joseph is being used by a switch engine

From Waverly one branch line extends 33 mi. to Muskegon, Mich., and a second branch extends 23.6 mi. to Allegan. At Waverly, south of a long siding that extends from that point to Holland, as shown in Fig. 2, there is a yard for exchanging cars between the main line and these branches. To avoid the expense of constructing a bridge over the stream, a switching lead was not built from the east end of this yard. After considerable study, it was decided to use a portion of the siding as a switching lead except at certain times. Two new crossovers, approximately 1,000 ft. apart, were added between the main track and the siding—in effect making two sidings, the east one, holding 110 cars, being known as Waverly, and the west, holding 128 cars, as Holland.

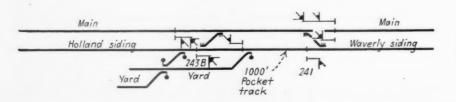


Fig. 2. Ingenious use of "pocket track" obviated construction of a \$40,000 bridge

Between the crossovers there is now 1,000 ft. of track which previously was part of the long siding. This so-called pocket track may be used as a lead when making flat switching moves in and out of the east end of the yard tracks. This use of 1,000 ft. of track between signals 241 and 243B is authorized by the display of a flashing-yellow aspect on a special low signal, under the control of the man in charge of the C. T. C. machine. If he needs to use this pocket track to run a road train through on the entire long siding, he sends out a control that stops the flashing-yellow aspect and displays a red aspect to warn the switch engine crew to get in the clear and stay there. This arrangement serves satisfactorily, and saved about \$40,000 for a bridge which would have been required to extend the vard lead.

Between New Richmond and East Saugatuck there is a grade of approximately 1.22 per cent ascending eastbound, with track curvature ranging up to 4 deg. 52 min. A helper engine is used to assist eastbound freight trains up this grade. Formerly, an eastward train, after having stopped for water, had to pull past New Richmond and stop again to allow the helper to leave the side track and couple on at the rear. At that point the train was close to the foot of the grade, which both increased the difficulty of getting a good start for the hill and limited train tonnage. As a part of the improvements, a new spur track-named "Helper" -for the helper engine was built 6,500 ft. (more than a maximum train length) west of New Richmond. Now an eastbound train can stop with the locomotive at the water tank at New Richmond and take water while the

helper is being coupled at the rear. A saving of 10 to 15 min. results, with the further advantage that the train can get a good run for the hill. This procedure has permitted an increase in the tonnage rating.

Previously, when the helper engine was moving westward down the hill from East Saugatuck, no eastward train could leave Fennville until the helper engine was in the siding at New Richmond. As a part of the new system, two opposing C. T. C.-controlled signals were installed an engine length west of the new track at Helper. Now, an eastward train can be advanced from Wells while the helper engine is returning from East Saugatuck to Helper. In the meantime, after the helper is clear of the main track, the eastward C. T. C. signal at Helper can be cleared to allow the train to advance to the water station at New Richmond. This arrangement is saving considerable train time. The two C. T. C.-controlled signals just west of Helper are staggered 600 ft. for added safety when a westbound helper and an eastbound train are being advanced to these signals.

The project of reconstructing the main track, building new sidings and installing the centralized traffic control was planned and carried out by railroad forces. The track work was under the jurisdiction of H. J. Bogardus, chief engineer, and under the direction of T. F. Burris, division engineer. The signaling work was under the jurisdiction of H. C. Lorenzen, signal engineer and superintendent of telegraph, and G. N. Black, assistant signal engineer, and the new signaling and centralized traffic control apparatus were furnished by the General Railway Signal Company.

PEACETIME PERFORMANCE OF A WARTIME FACILITY

Close cooperation by the railroads was essential in handling 141,000 carloads of freight last year through the New York Port of Embarkation

By LT.-COL. WILLIAM W. PREISCH*

Chief, Port Transportation Division,
New York Port of Embarkation

Lieutenant-Colonel Preisch is on military furlough from his position as division superintendent of the Lehigh Valley at Buffalo, N. Y. He began his military experience during World War I as a private and was later commissioned in France, where he served on the staff of General Atterbury. In World War II he was railroad chief of the Advanced Section Communication zone in the European Theater. Following hostilities he was the railroad member of the Allied Control Council in Berlin. He then reorganized the German railroads and became their general manager. More recently he was the railroad member of the military missions to Greece and Turkey.

Within hours after the first American air transport took off from Frankfort, Germany, to begin the Berlin Airlift, freight trains here in the United States began to move supplies to back up that operation. Their destination was the New York Port of Embarkation.

The Berlin supply operation has required the cooperation of many kinds of land, sea and air transport. Among the foremost have been the American railways. They have delivered to the Transportation Corps' East Coast port several thousand carloads of equipment essential to keeping that air armada in the German sky. Known as "Marine X," short for Marine Express,

*This article was prepared in collaboration with E. M. Borsuk of the Public Information Division, New York Port of Embarkation.



U. S. Army Photographs

Freight is unloaded under shelter in this great roofed "well"

these loads consist of items essential to the maintenance of air transports. From Wilmington, Del., Air Depot the railroads have brought radio transmitters and aerial navigation instruments; from the San Antonio, Texas, Air Depot come the engines; from the San Bernardino, Cal., Air Depot the fuel trucks to feed the transports; and from 14 other air depots throughout the nation have come other critical items.

Once the "Marine-Xs" have reached the port, they are "top-stowed" aboard ship so that upon arrival in Bremerhaven, Germany, or Liverpool, England, they can be removed first. While the Airlift has been the port "glamour boy" of 1948, it has been but one of many programs. In all its obligations, the American railroad system has given remarkable support. The logistics in carrying out the task have been no mean matter.

Many Major Programs Involved

The record shows that in 1948 the Port Transportation Division had delivered to its doorstep a total of 140,938 carloads of freight. Of the major programs that contributed to this enormous traffic, number one has been the handling of relief supplies administered by our Army in Europe. Into the port, by rail, there came last year 76,561 carloads of meat, flour, grain and other foodstuffs destined to the people of Europe. American Occupational Forces in Germany required 28,085 carloads of supplies. The European Recovery Program totaled 11,667 carloads; aid to Greece 7,667 carloads; aid to Turkey 5,262 carloads and the Relief Program

administered by the State Department 5,485 carloads.

Woven into this pattern of freight movement have been many additional tasks, and in these also the railroads have participated. Saddest of all tasks has been the return of American war dead from Europeon battlefields. Through the port in 1948 came the remains of 98,087 of our honored dead. To complete the movement in this country the Transportation Corps converted 118 former railway hospital cars into mortuary cars, capable of carrying 56 to 66 remains. As the number of cars is limited, and because they must be available both to the San Francisco Port of Embarkation and to New York, it has taken considerable pre-planning at Washington to utilize the available equipment properly, particularly when more than one ship arrives at New York or when San Francisco and New York receive ships at approximately the same time.

Through planning the cars are carefully selected by capacity so that the minimum number is used in a single operation. By proper scheduling of a mortuary train, it has been possible to dispatch it to distribution centers east of the Mississippi river and have it return before the mortuary ship has completed its debarking operation. Great credit must be given the Association of American Railroads for a superb job in establishing special train schedules to the various distribution points throughout the country.

A railroad equipment problem that arose at the time the cars were being converted concerned the total weight of each car when fully entrained with remains. Each casket weighs approximately 500 lb. Within the car, special stanchions and overhead trollies were installed to effect the entraining and detraining operation. Altogether this resulted in exceeding the permissible axle load, so it was necessary to remove battery boxes, batteries, steam traps, water tanks and other equipment not essential to this operation.

Household Goods a Big Item

American oversea theater commanders feel that when possible it is best to have the soldier and his family together. To achieve this "state of tranquility" in some instances almost all but the four walls of a home are moved to Germany. Often this means automobile, furniture, baby, in-laws, prams and cribs, kitchen utensils and even the family cat. There is a constant shifting of officers and men to and from overseas theaters. The Port Transportation Division sees that household freight goes forward to overseas points properly crated and that when it comes back it is in good shape for travel on the railroads.

Household traffic from Germany, Africa, the Middle East, the Mediterranean, the Balkans and England last year totaled 127,507 pieces. Roughly each incoming transport carries approximately 5,000 household pieces. They vary in weight from 80 to 8,000 lb. The division estimates that over 2,000 cars of such freight moved out of the port and a portion of it was at sometime handled by practically every railroad in the country.

As an old railroad man, I was especially interested and proud of the job performed by the roads last spring when 8,000 carloads of fresh potatoes were moved through Searsport, Me., to European and Mediterranean areas. I think the manner in which they went about the task indicates that railroad people realize its importance.

The major problem was to get maximum usage from the minimum number of available refrigerator cars. The movement was performed during the peak of the citrus season and naturally reefers were at a premium. The railroads looked about, even reaching into Canada, and came up with 2,000 cars. Careful planning moved reefers into the Maine up-country and back to Searsport where they were directly discharged into standby transports. No sooner were reefers emptied than back they went for more potatoes.

Evidence of how splendidly the carriers performed this task became apparent when reports from overseas theaters indicated that there had been less than one per cent spoilage in the total program.

With all the volume of traffic and the multitude of assignments that concentrated on the Port Transportation Division last spring, came the additional duty with the railroads when President Truman saw fit to seize them. It was necessary for our division to assign many of our key men to the job.

As we look back at 1948, we see that the American railroads in peace, as in war, are expediting in an auspicious manner the decisions of our government. The New York Port of Embarkation has witnessed innumerable instances where the roads have furnished, in spite of difficulties, the various types of equipment needed to do the job. To support the Berlin Airlift, we have seen the roads move freight at express train speed in trainload quantities. We have also seen the railroads trace and handle less than carload shipments with equal vigor and determination.

American railroads are supporting the Army masterfully and every railroad man, from trackman to president, has a right to be proud of the part he is playing in backing up our armed forces.



The Brooklyn army base has several large warehouses, but large quantities of freight are stored in surrounding "farm areas"





Above—The mechanical dish washer with cover raised

Left—Looking from the pantry into the kitchen where the dry-ice refrigerator is being inspected

Below—Gold portieres can be drawn across the car to divide it into four-table and eight-table sections



NEW DINING CARS FOR THE UNION PACIFIC

Many new developments are included in the kitchens of the 17 new dining cars delivered to the Union Pacific by the American Car & Foundry Co. These new cars are going in service on the railroad's fleet of streamliners, the first car having been scheduled for the "City of St. Louis." The general construction includes steel underframes with aluminum superstructures from the floor up, reinforced in the sides and roof to give exceptional strength.

A striking innovation, said to be employed for the first time in a dining car, is the use of dry ice to cool perishable food refrigerators in the kitchen and pantry and in the steward's locker at the opposite end of the car. Thermostatically controlled, the kitchen refrigerator holds 100 lb. of dry ice. The refrigerators are iced at the terminals and replenished once en route, whereas water ice formerly required icing at six stations between Omaha, Neb., and the west coast.

The dry-ice refrigerators are iced from inside the car, doing away with overhead icing and openings in the car roof where dust may enter. Mechanical refrigeration has been abandoned in the interests of simplicity of operation and maintenance. The dry-ice refrigeration has also proved less costly and more compact than water-ice refrigeration formerly used.

Mechanical Dishwasher

Another addition of interest in this new kitchen is the mechanical dish washer. All dishes are washed with a powerful spray action in hot water and then rinsed. There is no hand wiping and the dishes are delivered to the pantry and the range absolutely sterile.

The mechanical dish washer and the adaptation of dry-ice refrigeration to railroad dining-car use are largely a result of satisfactory experience with equipment of this type in hospital ships during the war. The original design for the kitchen and pantry, developed by the dining-car department of Union Pacific, has been approved by the U. S. Public Health Service as an outstanding example of dining-car kitchen construction.

Stainless steel is used throughout the kitchen and pantry from the floor to the ceiling. The floor is a continuous sheet of stainless steel extending from below the windows, waist high on one side to the same height on the other side. To facilitate cleaning a wide shallow trough leads down the center of the floor to a drain. This floor is overlaid with wooden racks. Supports for the range and counters are welded to the floor but go through it to be attached to the frame of the car, preventing their shifting under any circumstances.

An aisle $2\frac{1}{2}$ in. wider than previous dining car kitchens gives added working space for the crew in a place where space must necessarily be at a premium in this compact arrangement. Even so, there is 25 per cent more storage space for food in this kitchen than in

previous models. The water tank, suspended overhead, contains 140 gal. more water.

Special fans force air through ducts along the ceiling, changing the air in the kitchen and pantry completely three times a minute, adding greatly to the comfort of the crew. The range burns pressed sawdust, formed into log shape about 4 in. in diameter and 12 in. long. This fuel burns almost completely, leaving little or no ash. The steak broiler burns charcoal briquets. Government specifications require 10 ft.-candles of light in the kitchen and pantry, but the fixtures designed for this new diner give from 20 to 30 ft.-candles, affording sufficient illumination for all operations.

Interior Decoration

The dining section of the car has 12 tables, accommodating 48 people, and the decorative theme is gold and light gray. Wide windows at each table are hung with venetian blinds, with gold mirrors between the windows and yellow drapes, French striped, with brown on the sides of the car.

Above the windows is a frieze simulating hand-hammered ancient, tarnished gold. Fluorescent lights in continuous-line glass fixtures around the circumference of the ceiling provide lighting. The ends of the car are covered with silver-gray leather, decorated with a modernistic design of stainless steel, and the entry halls at both ends are covered with large gold mirrors.

The ceiling is rich ivory color and the floor covering is dappled green carpeting over a sponge-rubber pad. Tubular stainless steel has been used for the chair frames and they are covered with dark-red Spanish leather trimmed with tan. For the convenience of passengers, the tables have no legs, being suspended and braced from the side of the car.

The new dining car has its own radio with speakers hidden in the ceiling, an intertrain telephone, and is airconditioned. It will be staffed by a crew of 12 people, including a steward, chef, second, third, and fourth cooks, a pantryman and six waiters.

Cleanliness and efficiency are keynotes in this new dining-car where an average of 150 complete meals per serving are prepared and offered to passengers in record time.

Put competition between all types of transportation on an equal, un-subsidized basis and the entire country will benefit. Railroads, on a fair-competition basis, can more than hold their own. . . . The long term results would be better service, better equipment, and lower rates for the nation's passengers and shippers!

-Donald V. Fraser, president, Missouri-Kansas-Texas, in an address to the New York Society of Security Analysts.

In view of higher wages and prices for materials, one of the railroads' most perplexing problems today is that of finding ways to keep down expenditures for the upkeep of the fixed properties without reducing maintenance standards. At the recent annual meeting of the American Railway Engineering Association this subject was given thorough consideration in a

symposium in which three top-ranking engineering and maintenance officers sought to answer the question: How can the railroad construction and maintenance engineer best meet increasing costs of labor and material? Abstracts of the addresses which comprised this symposium are presented here.— Editor

COMBATING INCREASED MAINTENANCE COSTS—

The possibilities of effecting savings through heavier rail, more intensive mechanization, and stabilization of the roadbed are discussed in addresses presented at the A.R.E.A. meeting

-BY INCREASED MECHANIZATION

By S. R. HURSH
Assistant Chief Engineer—Maintenance
Pennsylvania

The railway maintenance engineer is facing a great challenge. Labor regulations are becoming more costly, material prices are at high levels, material shortages continue in some commodities, and the requirements of regulatory bodies continue to increase. The challenge to the maintenance engineer—as costs go up—is to offset them just as quickly as possible by increasing manhour output.

Labor Costs and Machine Purchases

Comparing average hourly Group III straight-time compensation with investment in roadway machines per mile of main track, we find a close relationship. In the years 1936 to 1946, inclusive, compensation increased 96 per cent, while investment in roadway machines increased 111 per cent. Only by continuing these trends in future years can we hope to maintain the railroads economically and increase output per man-hour. There is no better way to increase individual output commensurate with increased compensation than continued expenditures for labor-saving improvements, constant betterment of working methods, mechanization in ever-expanding application, and the constant application of technological developments.

In the face of recent wage increases and the fortyhour week, railway maintenance engineers must stop and analyze their present position in regard to mechanization, and evaluate approaches to increased mechanization in the future.

Each railroad should analyze its present investment in maintenance machinery. All machinery should be checked for condition and obsolescence. Total investment in each type of machine should be compared with work needs for that type, to determine if a proper ratio is being maintained. Also, age groups should be worked out for each type of machine to avoid getting into the position of trying to perform a certain operation with a group of machines. and then wondering why costs increase and the work is not being done.

Immediate Purchases Advised

Generally speaking, the usefulness of a machine decreases with age. Immediate purchases should be made of types of equipment in which we have an under-investment as regards quantity of work to be done, machinery age and potential savings. Antiquated machinery should be retired or, possibly, converted to some other use. I urge that future machinery applications be made on a carefully systemized basis with regard to investment, design trend and maximum utility. Purchasing departments must be brought in line with this policy, which considers the overall picture, rather than the initial dollar cost of a machine.

Many machines now on hand are capable of multiple uses, but are not being so utilized. Others, by slight conversion, could be adapted to other uses.

Equipment repair programs should be accelerated so that machinery is not allowed to stand idle while awaiting shop space. Mobile repair units should be provided so that working-season breakdowns are quickly corrected in the field. Railroads operating in regions of widely varying climatic conditions could well transfer machinery between regions for all-year utilization.

Keeping Adequate Records

Although generally neglected, it is important that full records be kept for each machine, showing date of purchase, cost, repair dates and possible multiple uses. Working locations should be carefully logged for each machine to insure the proper placement of all machinery to meet work needs.

Another important field in efficient equipment utilization, which is virgin territory to most railroads, is that of maintaining adequate cost and performance records of comparative hand and machine methods, and of various types of machinery on various jobs. This type of study, when made by trained men, is most useful in determining future machinery assignments for maximum economy, in revising inefficient working methods, in devising improved machinery, in preparing budgets, and in drawing up requests for machinery expenditures, and offers the possibility of substantial savings.

Machinery officers and supervision must be chosen for alertness, ingenuity and ability, and incentives must be provided in the way of advancement and salary to insure their continued interest. The machinery officer is a valuable trained specialist and his work must not be delegated to untrained and disinterested personnel.

Mechanizing Section Gangs

Generally speaking, section gangs are under-mechanized. There has not been sufficient adoption of spot-surfacing machinery, possibly because some developments in this line were poorly suited to the needs. Mowing and brush cutting still involve too much hand labor. Spot tie renewals are costly and involve considerable digging and handling. Splice, spike and bolt renewals by local gangs offer room for improvement.

Although we have made good progress, we still do not have the final answer to crib cleaning. On some railroads this is probably the most important track operation needing improvement. You cannot maintain satisfactory track conditions with foul cribs, and much of the present intertrack and border cleaning is failing due to foul cribs.

Considerable hand labor is wasted leveling ballast, dressing shoulders, moving cinders and sloping banks. Further progress is essential in equipment to deliver ballast in proper quantities to the proper place, and to level and dress it. This is a fertile field for investigation.

Field for Trucks

The use of off-track machinery and operations by the aid of trucks, using widened berms, is also of major importance. Many work trains could be eliminated by using trucks for the delivery of material—with considerable savings. Improvement programs should certainly include a schedule of berm widening to permit the use of trucks and free the tracks for revenue traffic. Specialized truck designs would lower the cost of transporting machinery, and many of our present machines could be truck mounted. Properly equipped trucks for welders, grinders, painters, bolt-tightening gangs, and many other appropriate outfits would result in great savings.

The delivery of ties involves a large amount of hand labor and is a source of many accidents. Perhaps it is possible to palletize tie shipments, transferring the units by crane to a properly designed truck for delivery along the track, where they could be unloaded by some contrivance.

The equipment manufacturers deserve high praise for their research and products, but they cannot do all the creative work. Being much closer to our problems, we must find the operations to be improved and line up possible solutions. When we have done this, I am sure that the manufacturers will cooperate in the development and production of the necessary equipment.



Section gangs offer large opportunities for the utilization of labor-saving equipment

- BY HEAVIER RAIL

By F. R. LAYNG Consulting Engineer

Generally, when we speak of heavy rail we have in mind those sections weighing about 130 lb. per yard and over. It is recognized that there are many miles of track where conditions are such that serious consideration need not be given to increasing the weight of rail. On the other hand, my observation is that our industry has been ultra-conservative in the introduction of heavier rail. About 1896 the 100-lb. ASCE section was introduced. Up to that time the 85-lb. section was the heaviest section in general use. It was not until about 1915 that sections in the neighborhood of 130 lb. per yard were adopted by a few railroads, and not until about 1930 that the Pennsylvania laid the first 152-lb. rail. As of December 31, 1946, only 14.2 per cent of the main-track mileage of all Class I roads was laid with 130-lb. rail and over, and only 0.46 per cent was laid with rail weighing 140 lb. or over.

Before some of the methods now in use for extending rail life, such as rail-end welding, were developed, the service life of rail was generally determined by end batter and curve wear, especially the former. Now it is possible to double or even triple the average service life. This change is of great importance in considering the economies of heavier rail.

Since 1940 the cost of track material has increased approximately 60 per cent. In this same period the cost of track labor, taking into account time paid for but not worked, has increased considerably over 100 per cent. This change in the relationship between the costs

of labor and material is an important factor in favor of the heavier rail sections.

The labor used in track maintenance is charged to I.C.C. Account No. 220. In 1946, 29 per cent of the total cost of maintenance of way and structures for all Class I railroads was charged to that account, compared with 25 per cent in 1930. The relationship of the cost of the several maintenance-of-way operations included in this account is as follows: Applying ballast—15 per cent; applying ties—15 per cent; applying rail—10 per cent; applying other track material—5 per cent; track maintenance (lining, surfacing, etc.)—55 per cent.

It is clear that further reductions in maintenance

Increase in Stiffness of Rail Sections with Increased Weight

	Section	Height	Per Cent Increase in Weight Per Yard		
1.			11 per cent over 1	38.7 49.0	27 per-cent
3.			15 per cent over 2	65.6	over 1 34 per cent-
4.	132 lb. RE	7½ in.	15 per cent over 3	88.2	over 2 34 per cent
5.	155 lb. PS	8 in.	17 per cent over 4	129.0	over 3 46 per cent over 4

costs can be accomplished by the use of materials which will, after installation, produce savings through a reduced demand for labor. I believe that this can best be accomplished by the replacement of lighter rail sections with heavier sections and accessories.

When rail is purchased we actually buy three qualities



Use of the heavier rail sections on the Bessemer & Lake Erie has resulted in substantial savings in maintenance costs, according to Mr. Layng

that bear directly on maintenance costs, namely, stiffness (the most important), strength, and durability. As stiffness increases less labor is required to maintain track to a desired standard of line and surface. This is true because stiffness reduces the deflection under traffic and distributes the load over more ties and over a greater area of roadbed and ballast. Hence there is marked reduction in the labor necessary to maintain line and surface. Also, the service life of all parts of the track structure is lengthened. Inasmuch as the stiffer sections are higher, the joint bars are much more efficient, further reducing maintenance. The fact that stiffness increases so much more rapidly than the weight (see accompanying table) should be carefully noted.

Strength and Durability

Additional strength beyond that needed to support the axle loads is of less importance than stiffness because the ultimate strength of the rail is never expected to be called fully into use. Nevertheless such additional strength may be called into use as the rail wears, and, to some extent, it adds to the average service life. Increased strength is also of value from the standpoint of safety; general experience with the heavier sections is that they show a substantial reduction in rail failures.

Regarding durability, it is difficult to determine a measure of this quality except by actual use of the sections that are to be compared, and then under conditions that are as similar as possible. On our road the average service life of the 100-lb. ASCE section was 61/2 years, while that of the 130-lb. PS section was 13 years. These data apply to the period before we adopted end hardening, the building up of worn rail ends, and the use of rail lubricators. Our experience with the 152-lb. section has been too brief to determine its average service life, but we believe that this will possibly be 20 years, a substantial increase over that of the 130-lb. section. Thus, the increased service life of the 152-lb. section compared with 130-lb. rail would be 50 per cent. At present this looks like a conservative estimate.

Because there is less frequent need for renewal, the increased service life of track materials also results in a substantial reduction in maintenance costs. There will also be a favorable effect on the life of ties since less adzing will be necessary.

Our experience with the 100-lb., 130-lb., 131-lb., and 152-lb. sections, and now the 155-lb. section, shows clearly there are substantial savings in both labor and material in the use of the heavier sections.

In changing from the 131-lb. to the 152-lb. section we add 38.8 net tons of metal (rail and other track material) per mile, an increase of 11.6 per cent. We estimate that the additional cost will be paid for in from three to four years by the saving in labor charged to Account No. 220 alone. In addition, we will realize the other savings that have been mentioned as well as a definite saving in wear and tear on equipment.

We are convinced that heavy rail is one of the greatest labor-saving devices we can use. I believe there are many railroads that have certain territories where they can justify its use. The weight of rail to use will, of course, be governed by the conditions in the territory under consideration.

- BY ROADBED STABILIZATION

By T. A. BLAIR Chief Engineer System Atchison, Topeka & Santa Fe

One of the fields that merits study by the maintenance engineer is that embracing the operating savings that can result from the use of methods of roadbed stabilization to cure soft track. Heavier rail, improved ballast placed to a greater depth, and longer ties all give a better distribution of loads and minimize the effect of soft track, but the only sure cure for this condition is stabilization of the roadbed.

The economy of grouting is established by a report on roadbed stabilization submitted this year by the A.R.E.A. Committee on Roadway and Ballast. Seventeen roads have reported their costs of stabilization, together with the savings resulting from deferred maintenance, on projects from one to ten years old. There are 35 projects for which this full information is reported. After eliminating one project on which 93 years would be required to repay the cost of installation, this cost on the 34 remaining projects would be returned through maintenance savings in an average of 3.6 years. The repayment period for these 34 projects varies from a maximum of 14 years to a minimum of 4 months.

For nine projects reported by the Santa Fe the cost of stabilization will be paid back through savings in section labor in an average of 3.5 years. A survey on the Santa Fe indicates that, of 7,600 mi. of ballasted. high-speed main track, 900 mi., or approximately 12 per cent of the total, may be classed as soft track requiring more than normal maintenance. Of this track 570 mi. have been grouted.

In addition to the direct savings in section labor resulting from stabilization, there are other savings, more difficult to assess, such as those resulting from the elimination of temporary slow orders (and in some cases permanent slow orders), the extension of rail and tie life, reduced requirements for ballast, and increased intervals between out-of-face resurfacing. Where all track requiring excess maintenance due to soft subgrade is grouted, as is being done on the Santa Fe, it is my conviction that operating savings, including all of the above features, will pay for the stabilization in two years' time. If only squeezes and critical soft spots are treated, the period in which the cost is repaid is much shorter. I believe that investigations by the individual railroads will prove that not only should "squeezy" track be stabilized, but that it is worth while to stabilize any soft track where there is excess maintenance.

Which Method to Use?

Although the statistics given in the committee report mentioned above apply to grouted track, I have purposely used the term stabilization. Stabilization can be accomplished in several ways, of which the more common are subdrainage, pole driving, sand piles, grouting, replacement of the subgrade material, and construction of supporting berms for embankments. My experience indicates that for certain conditions only one of these methods will be found suitable, although, in general, success may be expected with any of several



Approximately 570 mi. of soft track have been stabilized by grouting on the Santa Fe $\,$

of them—and the engineer's problem is to determine the one that can be utilized at least cost.

I have no doubt that, as more history is made with sand piles, they will prove most economical for certain conditions. On one test section of grout we have in a low fill across swampy land, where the soil below the grout is saturated and plastic, the results to date cause us to believe that the driving of poles at such locations will result in economy. Our experience leads us to believe that excess ground water in cuts must be disposed of through drainage.

Sliding fills are being stabilized by all of the methods mentioned above. Any solution to this problem is expensive and I have not seen sufficient data on results.

The construction engineer's work is now largely confined to line changes, but even here he should apply the principles of soil mechanics. There have been numerous instances in recent years, involving line changes in plastic clay territory, where, although the subgrade was properly compacted, water pockets and soft track developed within a few months after the line was placed in operation. In some cases the new line has had to be "slow-ordered" for a year or more until stabilized, requiring lower speeds than permitted by the old line with its heavier curvature. By classifying soils in borrow pits, as to type, the engineer often can specify suitable borrow mixtures to give a stable embankment. Where this is not feasible, sand and gravel can be hauled in and mixed with the top layers of the embankment, and also applied on the subgrade in cuts, to give a mechanically stable mixture. To do this it is necessary for the construction engineer and inspectors to educate themselves in soil mechanics and to acquaint themselves with the procedures followed by some of the state highway departments.

ROLLER BEARINGS IN FREIGHT SERVICE

A discussion of practical and economic considerations in the application of roller bearings to freight cars*

By DR. OSCAR J. HORGER Chief Engineer, Railway Division Timken Roller Bearing Company, Canton, Ohio

Before the next 24 hours have passed, several freight car journals will have burnt off at an average cost of about \$10,000 per journal. It is not unusual for the cost of burnt-off journals on one railroad alone to approach \$500,000 per year. This yearly expenditure for burnt-off journals would pay for the application of roller bearing journals to about 600 freight cars. Of course, these figures do not include the cost of other types of maintenance such as removing axles from cars for cut or hot journals.

We have modern locomotives to haul freight trains, but the freight car itself has not kept pace. In the past 10 years the capacity of freight locomotives for (a) work, (b) miles per day, and (c) high average speed, has increased greatly without a comparable percentage increase for the freight car. With carmen's responsibility for keeping freight trains moving, you will naturally be interested in any improvement needed for freight cars, such as roller-bearing journals.

The published proceedings of this association and many similar organizations have presented a critical picture of the waste-packed plain bearing on freight car journals. Now I do not intend to reiterate the inherent design and maintenance deficiencies characteristic of the plain bearing. You already know more about this than I can tell you.

It was only 20 years ago that it was exceptional rather than usual to find a passenger car or locomotive with roller-bearing journals. Now for some years no passenger cars have been built without roller bearing journals and many rebuilt cars have been converted from plain bearings to roller bearings. Similarly it is recognized as standard practice to equip road locomotives with roller bearing journals. This performance of the roller bearing on passenger and locomotive equipment has already proved the adequacy of roller bearings to do the job on freight cars and exemplified a progressive trend in railroading—a trend which has already extended to freight cars.

There is no disagreement among railroad men as to the desirability of roller-bearing journals on freight cars; their application is entirely a question of economics.

For example, a railroad does not have an incentive for applying roller-bearing journals when those cars would be off their lines most of the time. The present per diem rate on such cars in interchange service offers no inducement for increased investment in a better freight car. Each railroad, however, generally has a limited number of cars which can be kept on its own lines or in routed interchange service.

You often hear it said that roller-bearing journals cost too much. This is a comparative situation where the overall costs of operating and maintaining the plain bearing are unknown or not recognized.

In defense of the plain bearing, it is often stated that its performance record is over 99.99 per cent perfect. Incidentally, this perfection was found not good enough for locomotives or passenger cars.

3,000 Train-Miles per Hot Box

For example, the performance on railroad A is expressed as 300,000 freight-car miles per hot box. In this age of stupendous figures, some people multiply this figure by 8 journals per car to get 2,400,000 journal-box-miles per hot box. In reality the 300,000 should be divided by the average number of cars in a train; for 100-car trains this record would then be 3,000 train-miles per hot box.

This yardstick implies that an entire train movement is delayed because of one hot box. It may mean tying up one or more divisions. The dollar value of keeping trains moving can be visualized when we consider that centralized traffic control systems are being installed at a capital cost up to \$10,000 per mile.

Such mileage figures do not consider the discrepancy in reporting hot boxes. Some railroads do not include cars having hot boxes and even a burnt-off journal just as long as the train hauls the car into a terminal. Of course, this record can be improved by increased maintenance. The practice of jacking journal boxes for bearing inspection is followed on some manifest trains before the cars are loaded.

Consider the average speed of 16 m.p.h. for all classes of freight trains on Class I railroads. This figure is up to three times as great for the about 100 manifest overnight symbol trains in operation on 26 railroads where the length of run varies from 300 to 488 miles. It is at these higher average and maximum speeds that the number of hot boxes becomes alarmingly great and costly.

Modern freight power is capable of meeting these speed requirements, but this performance cannot be

Abstract of a paper presented at the March 14 meeting of the Car Foremen's Association of Chicago.

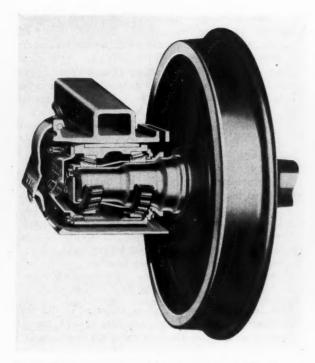


Fig. 1—Roller-bearing journal box applied in A.A.R. standard plain-bearing integral-box side frame

realized until the hot-box situation is corrected. Further, modern motive power has its maximum output at higher speeds; this often means that the maximum value of ton-miles per hour can be more efficiently obtained at the faster speeds if the freight cars are designed for such speeds.

Roller Bearings on Stock Cars

Roller-bearing journal applications can be made without purchasing any other new truck parts. Fig. 1 shows how they fit into the standard plain-bearing integral-box sideframe. There are 800 stock cars in service or being equipped on the Union Pacific, incorporating this general design; a smaller number of cars are in service on several other roads. The overall weight per journal is only 6 to 12 lbs. greater than that for the plain-bearing assembly.

The Union Pacific program originated with 300 cars allotted to an expedited livestock service between Salt Lake City and Los Angeles. Previously, this run required from 58 to 60 hr.; however, with the roller-bearing-equipped cars, they have reduced the running time to less than 30 hr., and have eliminated a stop-over at Las Vegas, Nev., for feeding, watering and resting livestock. Demands of livestock shippers for this expedited service have resulted in the application to an additional 500 cars.

In this application the axle may be machined from the plain bearing axle as long as the journal diameter is about half way between the new and condemning limit. The dust-guard opening is burnt out from the back of the plain bearing box, or omitted when new frames are cast, to permit placing the sideframe over

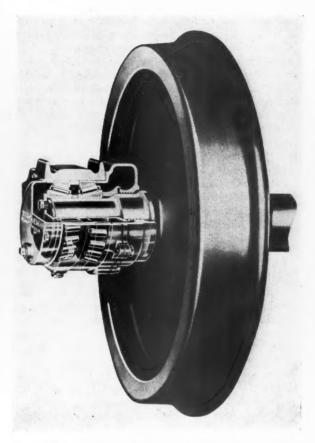
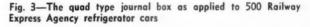
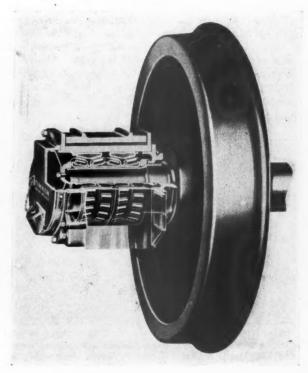


Fig. 2—Roller-bearing application for a Vulcan type side frame





the roller-bearing box. The sideframe rests on top of a removable crowned wedge member, located on top of the journal box. This wedge construction is somewhat similar to that used for the plain bearing except that its hardness is high enough to resist flattening. With plain bearings the pounding of the wedge into the roof of the box is a source of hot-box trouble because the load is not distributed uniformly over the plain bearing. It is necessary to build up the sideframe and stress relieve it periodically to correct this pounded-out condition. A similar condition is not detrimental to the operation of the roller bearing.

The roller-bearing journal box itself is a forgedsteel product so as to provide maximum strength for the light sections required to accommodate the limited space requirements. It is die forged to close tolerances and welded. Journal-box cost has always been a large percentage of the complete roller bearing application and this design has affected a material cost re-

Another design of roller-bearing journal-box being used on 1,000 open-top hopper cars on the Chesapeake & Ohio and on a number of head-end cars is shown in Fig. 2. This type is somewhat more expensive than that shown in Fig. 1. A Vulcan-type sideframe is required rather than the more frequently used integral-box-type frame. The C. & O. cars will operate between coal mines and car dumpers on the Great Lakes or tidewater.

Maintenance of plain-bearing journals in dumper service represents a cost item which will be eliminated with the use of roller bearings. Sufficient cars will be available to operate complete trains without reducing tonnage rating in cold weather, which is required with plain bearings.

Roller-Bearing Performance in Hump Yards

The free-coasting characteristics of roller-bearing-equipped cars have raised the question as to their operation in hump yards. Over two years ago, the Akron, Canton & Youngstown purchased 25 70-ton covered hopper cars equipped with roller bearings. These cars are used for hauling soda ash to Akron and Barberton, Ohio, from points as far west as Texas. They have operated in regular interchange service on 34 railroads and through regular hump yard procedure.

A survey indicates that the track grade varies considerably from one hump yard to another. Many other factors influence car operation such as car loading, type of load, and weather conditions affecting the friction in plain bearings. Roller-bearing-equipped cars have the same resistance in winter as in summer. With the latitude of control of braking force exerted by retarders no difficulty is expected with roller-bearing cars. In fact, many plain-bearing hot boxes have their initiation in hump-yard operation. Car impact disturbs the packing, brass and wedge. The roller-bearing operation will not be affected by such impacts.

Dynamometer tests were made on the Pennsylvania on 70-ton hopper cars up to speeds of 50 m.p.h. About 20 to 40 per cent lower drawbar pull was found for the roller-bearing train up to the time that the plain bearing acquired its normal running temperature, when this figure decreased to about 10 per cent.

Starting tests of single cars showed:

This high resistance of plain bearings is the reason for starting freight trains by starting one car at a time. Considerable slack is therefore required in the car couplings. This amount of slack is undesirable after the train gets into motion because of collision between cars. Both of these starting and running conditions impose severe stress conditions on the drawbar and coupler as well as the car body and lading. The starting resistance of the roller-bearing car being 1/10 to 1/30 of the plain-bearing car will eliminate the necessity for so much slack and consequent damage to the car and lading.

Roller-journal bearings may be lubricated by either oil or grease. Because of the better retention value of grease and the desire to obtain long periods between lubricant inspection most freight cars are grease lubricated. Association of American Railroads interchange rules now specify one-year inspection periods. Research is being directed toward increasing this period to 36 months so as to agree with the air brake cleaning period.

The Railway Express Agency has 500 refrigerator cars equipped with the quad journal-box design shown in Fig. 3. Here the journal box fits into the same truck frame opening as the plain bearing. These cars have have an equalized type of truck.



Part of an order for 500, these gondolas were shipped recently from American Car & Foundry's St. Louis car plant, for service on the Gulf, Mobile & Ohio

Communication . . .

WASHINGTON, D. C.

Defends Socialization Of Highway Costs

TO THE EDITOR:

Without question, one of the most fat-headed attitudes observable on the current scene is the tenacity with which railroads and their apologists blindly maintain that all moneys spent on and for highways redounds to the exclusive advantage of the motor car, motor bus and truck.

One would think that the railroads had no interest in highways-derived no advantage from them.

Let me say now, and flatly, that railroads are almost as dependent upon highways as are motor vehicles themselves. It's time someone called this constant bluff of the railroad propagandists and you may consider it called.

Disregarding the hundred thousand or more trucks directly owned, it is obvious even to a child that vast amounts of the tonnage handled by railroads reaches them for shipment and leaves them for delivery over the network of hardsurfaced roads of the nation. And I don't mean merely l.c.l. I mean cattle, and grain and coal and other items generally thought of as railroad-type freight. Check into the origin and final destination of these products and see if highways don't function up as essential to one or the other

As a matter of fact, the only freight hauled by railroads in which highways do not figure are those hauls which originate at a siding and terminate at a siding. Everything else moves over the highways.

All one has to do is to examine the history of highway building and promotion in this country to learn that the railroads once recognized their dependence upon highways. They were the outstanding advocates of good roads, spending millions of dollars on their promotion in the early days. Why? Because highways and streets were then, and are today, feeders for the railroads. Rails obviously can't run to every point of production and consumption and must have

feeder roads if they are to exist.
Your editorial "Who Lifts The Check For 'Operation Snowfight'?" is a fine example of the myopic viewpoint of

the rails and their partisans.

Tell me, please, how much freight would the railroads originate or deliver if the highways and streets of the snowbound states remained blocked-and then assure me, if you can, that the railroads have no direct, financial interest in the clearing of such arteries. After that, perhaps you would like to assure me that part of the cost of railroad service is not concealed in people's tax bills and specifically in the heavy levies paid by highway users.

It seems to me, if one were called upon to name those U. S. corporations which benefit to the greatest extent financially from the building and maintenance of this country's system of highways and streets, the answer would be easy. One would have to list merely the 132 Class I railroads. Benefits accuring to any limited number of highway users would be microscopic by comparison.

WALTER W. BELSON

Director Public Relations,
American Trucking Associations, Inc.
[It is a "benefit" to a community to have available the services of grocery stores, clothing stores and movie theaters, but that fact—so far at any rate—has not been urged as an excuse to make the rent of stores and movie houses a charge on the taxpayers instead of upon the prices paid by the customers of these establishments.

The transportation of freight and passengers by rail is just as much a public "benefit" as their transportation by highway, but on the railroads the actual customers pay the entire cost-unlike highway transportation where the cost

is shared in large part by the taxpayers. Taking costs of an economic service off of direct beneficiaries and spreading them in whole or in part over the entire taxpaying community is the very essence of socialism.

Without railroads to haul the raw materials which enter into the manufacture of trucks, the truck manufacturing industry would probably never have developed and could not today build trucks except at prohibitively high prices. Would Mr. Belson, therefore, suggest that railroad transportation of raw materials be subsidized by the levying of an ad valorem tax on all property, including all trucks?

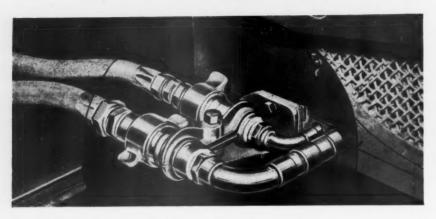
As M. S. Rukeyser wrote recently in the Hearst papers of socialized medicine in Britain, "when you take the price tag off of a visit to the doctor, the demand for medical care skyrockets." The price tag has largely been removed from highway service-especially their commercial use-in this country, which explains why the "demand" (i.e., the political demand, not the economic demand) for highways is usually far ahead of the supply. Again, Mr. Rukeyser says: "When you take away the price tag, you remove the regulator from the market place, and introduce chaos"-which latter term has been used repeatedly as the only accurate characterization for the conditions which socialized pricing has produced in this country's transportation industry.

One might suppose that some acquaintance with and respect for the principles of elementary economics—other than the dogmas of Karl Marx and Lord Keynes-would be found as standard equipment in so exalted a post as director of public relations for the American Trucking Associations, but Mr. Belson's letter betrays scant trace of any such academic encumbrance. His concept of serious debate of a question of grave public importance ascends only to the point of hurling nursery-school epithets at those whose grasp of these matters evidently lies outside the scope of his understanding.—Editor.]



Twenty-five-ton gantry crane, with five-ton auxiliary, recently placed in service by the Great Northern and Northern Pacific at King street, Seattle, Wash.

NEW AND IMPROVED PRODUCTS OF THE MANUFACTURERS



A typical installation of quick-disconnect self-sealing air-conditioning couplings to a condenser unit

QUICK-DISCONNECT COUPLING

A quick-disconnect coupling for use on Freon refrigeration units is being marketed by the Paxton-Mitchell Company, Dept. Q-4, Twenty-seventh and Martha streets, Omaha 5, Neb. Originally designed to provide a rapid means of changing air-conditioning units on railroad passenger cars, the product is also applicable to other types of service, such as air, gas and hydraulic systems.

A primary advantage of the quickdisconnect coupling is the reduction of oxidation and moisture absorption into the air-conditioning system, thereby avoiding the unfavorable reaction of Freon 12 and moisture which causes a breakdown of the refrigerant. The self-sealing quick-disconnect couplings eliminate both the opening up of the system to the atmosphere and the need for unsoldering and soldering connections during equipment replacement.

The coupling is fabricated from extruded brass bar stock to eliminate porosity which might result in leaks. Fast Acme threads permit rapid opening of the union joint. The dual valves are self closing as the union joint is broken and guided to prevent cocking in the guides. The unit is designed so as to relieve the pressure between the valves while they are being disconnected and to trap only a minimum of air between the valve seats when making up

the union. The valve seats are of removable Freon-resistant Neoprene.

This coupling is made in $\frac{1}{2}$ -in., $\frac{2}{4}$ -in., 1-in., and $\frac{1}{2}$ -in. sizes, all permitting in excess of 100 per cent of pipe capacity for equivalent pipe sizes. It is said that a tight seal may be made under the highest pressures encountered in Freon refrigeration systems and rapid change out of refrigeration units accomplished without the necessity of pumping down the unit.

ELECTRIC BURDEN-CARRYING TRUCK

The "Shuttle-Truck"—an electric burden-carrying vehicle developed by the Mercury Manufacturing Company, Chicago—is a 2,000-lb. capacity three-wheel truck, available with either pneumatic or cushion-type solid tires. The heavy-duty electric tractor drive is arranged for 30-volt power source and a battery of approximately 225 ampere hour capacity is recommended.

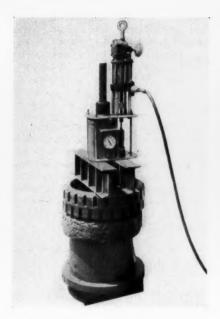
The load platform is 22 in. high and 40 in. wide, tapered at the rear for minimum turning radius. The clear loading space is in excess of five feet lengthwise of the truck behind the battery compartment. The vehicle is clear on both sides of the compartment and the operator's seat to permit handling of long loads. One feature of the truck is a magnetic contactor travel controller providing three speeds in either direction. The controller is foot-pedal operated with a standard automotive accelerator pedal convenient to the operator's right foot. Reversing is accomplished by a switch near the operator's left hand.



New electric "Shuttle-Truck." The pipe racks are optional and the number and spacing of the rack sockets in the frame can be varied to meet specific requirements

INDUSTRIAL TRUCK TIRE CHANGING

Recently announced by Atlantic Distributors, Inc., 52-00 Van Dam st., Long Island City 1, N. Y., is a hydraulic press for removing and replacing industrial truck tires of the solid type, in the same operation. Wheels of the truck must be removed from the vehicle before this device can do its work. The wheel is placed on the pressing band as shown in the photograph, the new tire placed on top of the old one and the press put into action. The complete tire change is said to be possible in 11 min. Capacity of the hydraulic jack used is 100 ton.



This unit is portable and light enough, the manufacturer states, to be moved by one man. In addition to its use as described above, other jobs of pulling, pushing or pressing can be performed.



The Capitol Projector Corporation, 814 Tenth avenue, New York 19, is distributing on a rental basis two types of self-contained motion picture projection units suitable for installation in railroad stations.

The Porto-Sound, 38 in. wide, 34 in. deep and 72 in. high, can be used for continuous or intermittent display to the general public, free of charge, of railroad public-relations or advertising pictures. Its inside projector, operating on alternating current only, displays 16-mm. silent or sound films.

The Midget Movie, 18 in. wide, 18 in. deep and 56 in. high, is coin-operated and intended for amusement of passengers while waiting for trains. It can be plugged in on any 110-volt alternating current circuit, or, by use of proper rectifiers and transformers, can be used with direct current or with other voltages. It is equipped with tamperproof coin boxes. For 5 cents it shows 100 ft. of 16-mm. silent film, running from 2½ to 3 min.

Midget Movie is installed on a percentage lease basis by Capitol Projector, which bears all costs of service and maintenance, including federal and local license fees, and changes films at fixed intervals, determined by machine locations. Similar services should be available in the near future from Capitol licensees in cities outside the New York



The Porto-Sound unit can be used for display of public relations movies in station concourses

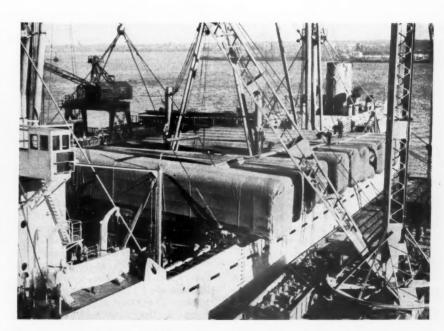
area. About 2,000 film subjects are available. The railroad pays only the cost of electric current, and receives 30 per cent of the gross proceeds. It is said that collections from machines installed for the Hudson & Manhattan last fall have averaged about \$21 gross per week per machine; on that basis, revenue to the railroad would be over \$325 per machine per year, all net except for electricity, which, in New York, averages about 75 cents per unit per month.

The H. & M. expects to install about



Many of the Midget Movie films have a special appeal for small fry, but subjects suitable for all ages are available

40 Midget Movies in its stations. Other installations are in operation or reportedly under consideration on the Long Island, the New York Central, and the New York, New Haven & Hartford. The Long Island has also used Porto-Sound units for display of public relations films in its New York and Brooklyn terminals (see Railway Age of January 8, page 256).



The Norwegian freighter, S. S. Beljeanne, preparing to sail for Rio de Janeiro with a cargo of 23 all-stainless steel passenger cars built by the Budd Company for the Central of Brazil. This was the first shipment of a total of 63 cars Budd is to build for the road. The seventeen 85-ft. cars on deck are overhanging approximately 8 ft. on each side. Built at the Red Lion plant, Philadelphia, Pa., the cars were run over standard 56½-in. gage tracks to the pier, where 800 ft. of special track, 63 in. wide, had been laid to accommodate the width of trucks used in Brazil. Each car was lifted from its standard trucks and lowered onto the wider trucks before being hoisted aboard ship

Union Supports Roads In Reparations Cases

B. of L.E. says awards could bring nationalization

Payment of the "large reparation awards" sought by the federal government on the charges it paid for wartime freight shipments might create in the railroad industry a "bankruptcy condition" which could result in government ownership and operation of the carriers, the Brotherhood of Locomotive Engineers told the Interstate Commerce Commission last week. The statement was embodied in a petition filed with the commission for leave to intervene in the 17 reparation cases now pending. The petition was signed by the brotherhood's grand chief engineer, Alvanley Johnston.

The reparations cases arose out of complaints whereby the government is alleging that it was overcharged by the railroads on its shipments of various commodities during World War II. As noted in the *Railway Age* of March 26, page 103, the commission has assigned five of the proceedings for hearing before its Division 4 at Washington, D. C., on June 21.

The B. of L.E.'s warning of the threat of government ownership was followed in its petition by an assertion that government ownership "is contrary to the public interest and the interest of petitioner." In its opening plea for leave to intervene in support of the railroads, the petition asserted that the brotherhood had a "vital interest" in the proceedings, because its 80,000 members have "a direct, vital and continuing interest in the maintenance of a financially sound and solvent railroad industry in the United States."

Earnings Repaid as Taxes

After referring next to the railroad industry's 1947 payroll of about \$4.4 billion, its purchases in that year of materials and supplies costing about \$1.9 billion, and its payment of 1947 taxes totaling \$936 million, the brotherhood went on to express its belief that "a large part, if not substantially all," of the traffic involved in the reparations cases moved over railroads which paid excess profits taxes for the years of such movements. It is also the belief of the brotherhood that "a large portion of such taxes was paid on the identical earnings which complainant now seeks to take from the railroads in the form of reparations."

The petition added that it would be "contrary to the public interest and the interest of petitioner for reparation awards to be made at this time which would have the effect of reducing railroad revenues during the war years and at the same time allow the government to retain the taxes paid on such revenues.' Moreover, the petition also said, such a procedure would be not only "unfair and inequitable," but it would be "economically unsound," because it would deprive the railroads of funds that "would otherwise be available for the employment of labor, the purchase of modern and adequate equipment, and the improvement of service and efficiency in operation."

On the matter of modern equipment, the petition followed through to note the brotherhood's interest "in the adoption by the railroads of the most modern safety devices." The payment of large reparation awards, the petition suggested, "might and probably would be urged by the carriers as a ground for delaying the installation of such safety devices." Also asserted was the brotherhood's interest in adequate maintenance of railroad facilities; and, in that connection, the petition expressed fears that the "expropriation of railroad funds" for payment of the claimed reparations would take money...that is needed to restore and maintain the roadhed, track and equipment...to pre-war conditions.

Would Cause Rate Increases

As to the government traffic involved, the brotherhood contended that it was accorded "preferential treatment," which warrants consideration by the commission of the "more costly" service rendered on it than on contemporary commercial traffic. The petition also argued that large reparation awards would call for railroad rate increases; and that such advances would combine with poor service, resulting from curtailed expenditures for maintenance and improvements of facilities, to "drive railroad business to competing forms of transportation and cause widespread unemployment among the ranks of railroad labor."

As to procedure in the cases, the brotherhood urged the commission to consider the government complaints as a whole. "The value of the service performed by the railroads during the war," the petition said, "can only properly be measured by considering the value of the service as a whole in the light of all the circumstances under which all of such services were rendered. Proper conclusions cannot be reached in any one of the reparation cases without consideration of the evidence and conclusions

reached in all of the other reparation cases. For the commission to hear and decide these cases separately, rather than as a unit, would be grossly unfair, highly prejudicial and contrary to the public interest and the interest of petitioner."

1948 Capital Outlay Greatest on Record

Total was \$1.3 billion, including \$917.4 million for equipment

Capital expenditures for equipment and other improvements to railway property made by Class I railroads in 1948 totaled \$1,273,484,000, the "greatest amount for any year on record," the Association of American Railroads announced this week. In making comparisons with expenditures for previous years, consideration should be given to the fact that the average cost of railway materials is now about twice what it was 20 years ago, the A.A.R. said, adding that prices of equipment in some instances have "more than doubled."

Capital expenditures in 1948 for railway equipment, including locomotives, freight and passenger-train cars, totaled \$917,449,000, which was greater than in any previous year. Including the carryover from 1947, Class I roads in 1948 authorized expenditures of \$1,772,-848,000 for new equipment. Deducting the \$917,449,000 actually spent during the year, railroads had on January 1, 1949, a carryover of unexpended authorizations for new equipment amounting to \$855,399,000, the greatest amount for any corresponding period since the compilation of these records began in 1921. This carryover into the present year included orders for approximately 90,000 new freight cars, nearly 2,000 passenger cars and 1.633 new locomotives.

Of the total amount expended in 1948, Class I roads spent \$417,139,000 for freight-train cars, \$120,808,000 for passenger-train cars, and \$350,968,000 for locomotives. Each of these totals represents the largest amount expended since these records have been compiled. Class I railroads in 1948 installed nearly 100,000 new freight cars, the greatest number for any year since 1925. They also installed 1,167 new passenger-train cars and 1,487 new locomotives.

Capital expenditures made by Class I railroads for roadway and structures in 1948 totaled \$356,035,000 which was greater than in any year since 1930.

These expenditures included the following: Heavier rail, \$48,731,000, the greatest amount ever expended; yards and sidings, \$58,923,000; signals and interlockers, including telegraph lines, automatic train control, etc., \$47,599,-000; shops and engine houses (including machinery and tools), \$41,482,000; bridges, trestles and culverts, \$28,897,-000; station and office buildings and other station facilities, \$26,469,000; additional main track, \$21,173,000; additional ballast, \$6,249,000, and for other improvements, \$76,512,000.

Capital expenditures made annually by Class I roads in the past 19 years follow:

194	8																		\$1	,273,484,000
194	7																			864,689,000
194	6																			561,957,000
194	5																			562,980,000
194	4																			560,112,000
194	3															·				454,282,000
194																				534,897,000
194																				543,021,000
194																				429,147,000
193																				262,029,000
193																				
		۰		0		٠		۰				9			٠		٠			226,937,000
193	7		٠				٠		٠	٠				٠						509,793,000
193	6								٠			,								298,991,000
193	5							٠												188,302,000
193	4									ı										212,712,000
193	3																			103,947,000
193	2															·				167,194,000
193	1															ï				361,912,000
193	0			*							٠					×		*		872,608,000

More detailed data for expenditures in recent years, including 1948, for the principal equipment and roadway items are shown in the accompanying table.

Wants 550,000 Cars **Bought by Government**

Johnson says they should be acquired as "part of armament"

Purchase by the federal government of 550,000 new freight cars, and of all steam locomotives now being retired by the railroads, was advocated this week by Director J. Monroe Johnson of the Office of Defense Transportation, who said that this rolling stock should become part of the armament now being acquired under the national defense program. At the same time, the O. D. T. director announced that he was withdrawing on April 15 from participation in the voluntary steel-allocation program for freight cars which is administered by the Department of Commerce's Office of Industry Cooperation.

Col. Johnson made these statements on March 30 in an address before students of the Fourth Annual Rail Transportation Institute of the American University, Washington, D. C.; and he elaborated on them in an interview the following day. He was not critical of the railroads for not ordering more cars because, he said, the present situation as to loadings would not justify additional orders. But he emphasized that this disposition to understand the railroads' position does not alter his view that railroad equipment is a "part of

GROSS CAPITAL EXPENDITURES ON RAILWAY PROPERTY-**YEAR 1948**

Railways of Class I-United States (000 omitted)

	Un-	Addi-			
	expended author- izations brought over from 1947	tional author- izations during year 1948	Total amount authorized including carry-over from 1947	Amount expended during year 1948	Carry-over of un- expended author- izations 1949
Item	A	В	C = A + B	D	E = C + D
EQUIPMENT:					
Locomotives	\$251,964	\$371,499		\$350,968	
Freight-train cars	324,023				
Passenger-train cars	229,663				
Other equipment	16,542	30,941	47,483	28,534	18,949
Total Equipment	\$822,192	\$ 950,656	\$1,772,848	\$917,449	\$855,399
ROADWAY AND STRUCTURES:					
Additional main track	\$25,724	\$13,312	\$39,036	\$21,173	\$17,863
Yards and sidings			86,646		27,723
Heavier rail		57,141			25,179
Additional ballast	798	6,205	7,003	6,249	754
Shops and engine houses (including machin-					
ery and tools)	29,717	43,656	73,373	41,482	31,891
Station and office buildings and other station				05.460	27 100
facilities	18,473				
Bridges, trestles and culverts	25,593	36,523	62,116	28,897	33,219
Signals and interlockers, including telephone					
and telegraph lines, automatic train con-		F7 000	07.140	47 500	39,550
trol, etc	35,756			47,599	
All other improvements	79,292	88,350	167,642	76,512	91,130
Total Roadway and Structures	\$261,559	\$383,271	\$644,830	\$356,035	\$288,795
Grand Total	\$1.083.751	\$1,333,927	\$2,417,678	\$1,273,484	\$1,144,194

Source: Reports of the carriers to the Bureau of Railway Economics. Note: Additional track includes rail and tie fastenings and other track material.

GROSS CAPITAL EXPENDITURES ON RAILWAY PROPERTY— 1944 TO 1948*

Railways of Class I-United States (000 omitted)

EOUIPMENT:	1948	1947	1946	1945	1944
Locomotives. Freight-train cars Passenger-train cars. Other equipment.	\$350,968 417,139 120,808 28,534	\$222,626 248,371 80,102 14,802	\$97,310 159,282 47,169 15,256	\$127,934 138,114 30,843 17,888	\$178,017 134,533 1,921 13,760
Total equipment	\$917,449	\$565,901	\$319,017	\$314,779	\$328,231
ROADWAY AND STRUCTURES:					
Additional main track	\$21,173	\$18,504	\$14,781	\$15,566	\$20,616
Yards and sidings	58,923	43,792	36,427	31,733	36,666
Heavier rail	48,731	44,628	31,545	37,579	35,720
Additional ballast	6,249	5.141	4,960	6,343	6,997
Shops and engine houses (including ma-	-,	-,			
chinery and tools)	41,482	38,742	34,289	38,243	28,131
Station and office buildings and other	***, ***	30,112	0.1,20	,-	
station facilities	26,469	25,030	17,119	14,549	13,433
Bridges, trestles and culverts	28,897	26,627	24,972	24,364	25,088
Signals and interlockers, including tele-	20,071	20,021			
phone and telegraph lines, automatic					
train control, etc	47.599	39,120	29,757	30,039	22,091
All other improvements	76,512	57,204	49,090	49,785	43,139
Total Roadway and Structures	\$356,035	\$298,788	\$242,940	\$248,201	\$231,881
Grand Total	\$1,273,484	\$864,689	\$561,957	\$562,980	\$560,112

*Compiled by Bureau of Railway Fconomics. Association of American Railroads. Note: Additional track includes rail and tie fastenings and other track material.

armament" and should be considered as

He had made representations along that line to interested government officials, suggesting that the 550,000 additional cars be ordered for delivery at the rate of 15,000 a month; and that they be offered to the railroads for sale or lease. If they were not taken by the carriers. Col. Johnson would store them so they would be available in the event of an emergency. Likewise, he would have the government acquire, at scrap value, and store the steam locomotives being retired.

The colonel's recommendation as to

freight cars is based on the "total agreement" among government agencies which have studied the subject that the freightcar fleet, now about 1,750,000 cars, should be built up to 2,000,000 cars. Allowing for retirements, he calculates that it would take 550,000 new cars to accomplish that purpose within a reasonable time. It is his view that the government, which is spending some \$18 billion a year for defense and aid to Europe, could spend "\$1 billion a year for about two and one-half years" for the "part of the armament which is now being left out."

In a March 24 letter advising Secre-

tary of Commerce Sawyer of his desire to withdraw from further participation in the voluntary-allocations program, Col. Johnson pointed out that the allocations were not being taken up. "The primary problem," he added, "is now one of new orders rather than the allocation of steel." Thus, the colonel saw no justification for continuing O. D. T.'s Division of Manpower and Materials; and he said the division would be discontinued on April 15.

Secretary Sawyer announced on March 31 that Col. Johnson's request for relief from further responsibility in connection with the administration of the program would be granted, and that the administration "will be carried on" by O. I. C. "In granting the request," Secretary Sawyer said, "I wish to congratulate O. D. T. Director Johnson and his staff on their successful administration" of the program.

N. E. Potato Rates Reduced

The Interstate Commerce Commission has granted to the Aroostook Valley, the Bangor & Aroostook, the Canadian Pacific and the Maine Central permission to reduce rates on carload shipments of potatoes to various New England destinations, effective April 6. Joint application of these roads for authority to effect the reduction, to meet truck competition, was reported in the Railway Age of March 26.

Stoddard Becomes Director of A. A. R.

Arthur E. Stoddard, president of the Union Pacific, was elected to membership on the board of directors of the Association of American Railroads at the board's March 25 meeting in Washington, D. C. He succeeds George F. Ashby, whom he also succeeded in the U. P. presidency.

S. P. Uses Radar to Find Faults In Communication and Signal Lines

The first installation in this country of radar-type equipment as a trouble shooter in locating breaks, crosses or grounds in railway telegraph, telephone and signal lines has just been completed by the Southern Pacific.

The equipment has been installed at Dunsmuir, division terminal in northern California. It reportedly has been successful in quickly spotting line interruptions, occasionally to the exact pole, thus saving much time in getting repair crews to the scene of the trouble. The location of a break in the wires, or a grounded point, is indicated by the pattern of a wave-picture projected on the radar apparatus. The radar device has an effective range up to 100 mi., depending on the kind of metal in the wire circuit, and can be plugged into any telegraph or telephone circuit.

Other installations of the new radartype fault finder are planned by the S. P. Further information on this installation, which was placed in service under the jurisdiction of the road's superintendent of telegraph, A. W. Flanagan, will be tound in a detailed article by Mr. Flanagan in the April issue of Railway Signaling and Communications.

Allegheny Board Holds Lively Meeting at Pittsburgh

Over 350 railroad and industrial traffic men attended the 21st annual meeting of the Allegheny Regional Advisory Board at Pittsburgh, Pa., on March 24, to hear and participate in discussion of the freight-car supply situation and other matters.

F. M. Garland, general traffic manager of the Pressed Steel Car Company, speaking at the board's executive committee meeting called attention to the sharp decline in railroad orders for new freight cars, pointing out that many roads are operating uneconomically many old cars in need of repair. He urged that railroads restrict the use of their car shops to repair work, and turn over to the car-building industry all new car orders.

Clem W. Gottschalk, general traffic manager of the Jones & Laughlin Steel Corp., Pittsburgh also stressed the need for railroads to order more cars in the near future, particularly gondolas. He urged that the roads continue their carbuilding programs on a basis at least comparable with those of 1948. On the same subject, W. E. Callahan, manager, Open Top Section, Car Service Division, Association of American Railroads, said in part: "I . . . hope that improved business conditions and consequent increased loadings, which I am optimistic enough to believe will develop in the near future, may have a favorable effect both on steel allocations and orders for new equipment to the extent that there will be a general stimulation in this car-building program." He also called attention to "progress in the carbuilding program," as evidenced by a net increase of nearly 23,000 cars on March 1 as compared with March 1, 1948.

Car supply, heavier loading of cars, and proper loading and cleaning were the highlights of the car efficiency committee's report, which was presented in part in the form of a one-act skit, "Dirty Cars," acted out by G. W. Brundage, committee chairman and traffic manager of the Bessemer Limestone & Cement Co., and E. C. Jepson, general traffic manager, Wheeling Steel Corporation. A. C. Roy, traffic manager, Eastern Gas & Fuel Associates, reported for the freight claim prevention committee, and Dr. Sidney L. Miller, professor of transportation at the University of Pittsburgh. for the legislative committee. Commodity committee reports forecast an increase of one per cent in car loadings in the board's territory in the second quarter of 1949, as compared with the same period in 1948.

William R. Cox, freight traffic manager of the Pennsylvania at Chicago, the principal speaker at the board's luncheon, called upon the members to combat "the infiltration of Communism in the United States through a gradual development of Socialism." "Too much government paternalism," he said in part, "can be destructive. If the situation ever gets to a point where the federal government, for any reason whatsoever, takes over any important segment of our industrial or transportation groups, the end of all its competitors will not be far off because the government could not permit competition with itself."

Mr. Gottschalk was elected general chairman to succeed John B. Keeler, manager, traffic and transportation department, Koppers Company. Other officers elected were: Vice-general chairman, W. E. Fowler, general traffic manager, Youngstown, Ohio; chairman, executive committee, W. W. Larkin, traffic manager, Continental Foundry & Machine Co., Wheeling, W. Va.; vice-chairman, executive committee, J. N. Lind, assistant general traffic manager, National Supply Company, Pittsburgh, and general secretary, P. W. Hartsock, assistant traffic manager, Warner Company, Bellefonte,

C. P. R. "Subsidizes" Shippers

The Canadian Pacific has "subsidized" freight shippers by \$45 million in the past two years, because its freight rates have not matched its increased expenses. C. F. H. Carson, its senior counsel, told the Canadian Board of Transport Commissioners at Ottawa, Ont., this week in opening final argument in behalf of the Canadian railways' application for a 20 per cent increase in freight rates. C. P. R. counsel also told the board that the requested increase would "fall far short" of meeting the company's 1949 "deficiency," and that a considerably greater increase would be justified.

The final argument before the board followed by about a month the close of hearings on the application, as reported in previous issues of Railway Age.

"California Zephyrs"—Correction

Goodall Fabrics, Inc., New York, furnished upholstery for the "California Zephyr" trains—not the Goodall Company, as stated in the partial list of specialties and equipment on page 79 of the March 26 issue of Railway Age.

New Haven's Hartford Division To Be Dieselized This Year

The Hartford division of the New York, New Haven & Hartford will be completely Dieselized this year, according to the road's recently released annual report for 1948. When this change is completed, the report added, "the only remaining steam operations will be on the cast end of the line, except for occasion-

al use of steam on the Shoreline (Boston-New York) and Cedar Hill-Worcester line during periods of peak traffic or other emergencies." The report also revealed that 95 per cent of the New Haven's freight service, 92 per cent of its passenger service and 84 per cent of its yard-switching mileage is now handled by Diesel-electric and electric locomotives.

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I.C.C. Issues Reports in Three Intrastate Rate Proceedings

Three recent reports of the Interstate Commerce Commission have found that unjust discrimination against interstate commerce results from the failure of state regulatory authorities to authorize application of interstate rate increases to intrastate rates. The reports were in No. 30015, which involved intrastate fares in Alabama; No. 30082, intrastate express rates in Mississippi; and No. 30024, intrastate freight rates in Texas. They required increases designed to remove the discriminations.

Transport Session Planned By Chamber of Commerce

Senator Johnson of Colorado, chairman of the Senate committee on interstate and foreign commerce, will address a transportation session to be held May 4 as part of the annual meeting of the Chamber of Commerce of the United States in Washington, D.C. The chamber's meeting will extend over four days, May 2 to 5, inclusive.

"Can Congress Cure Transportation Ills?" will be the subject of Senator Johnson's address, which will be followed by a panel discussion of the question, "How Serious Is the Threat of Transport Nationalization?" Participants in the panel discussion will be Andrew H. Brown, transportation commissioner, Cleveland (Ohio) Chamber of Commerce; Fairman R. Dick of Dick & Merle-Smith, New York; and Sidney L. Miller, professor of Transportation, University of Pittsburgh. Evans Nash, chairman of the chamber's Transportation and Communications Department Committee, will preside.

Furloughed Employees Recalled As Coal Mine "Stoppage" Ends

A substantial number of the approximately 71,000 railroad employees who were furloughed during the week of March 14 because of the two-week "work stoppage" ordered by John L. Lewis in eastern, southern and midwestern coal mines were expected to be recalled either this week or next, following the miners' return to work on March 28

The Pennsylvania announced that it would recall its furloughed employees between April 1 and April 7, "in keeping with the volume of traffic." The Chesapeake & Ohio reported that it would recall 7,043 men on its Chesa-

peake District on April 4. The New York Central recalled 5,255 shop men, also effective April 4, and planned to call back an additional 3,375 operating employees "as business warrants." Other Eastern coal-carrying lines, such as the Baltimore & Ohio, the Erie, the Jersey Central Lines, the Lehigh Valley, and the Delaware, Lackawanna & Western, among others, were following the same general policy of recalling furloughed employees as traffic picked up.

Details of the original layoffs were given in the *Railway Age* of March 19, page 101.

Mediation Board Intervention Halts Pullman Conductors' Strike

The Order of Railway Conductors postponed its strike of Pullman car conductors following announcement by the National Mediation Board on March 26 that it would intervene, and that a mediator would be sent to Chicago during the week of March 27. Approximately 2,000 Pullman conductors had been scheduled to strike at 6 a.m. on March 31 (see Railway Age for March 26, page 105) over disputes which, ordinarily, would be handled by the National Railroad Adjustment Board.

Would Cut Dairy Rail Rate To Meet Truck Competition

Railroads in Western Trunk Line territory this week proposed that rates on carload shipments of dairy products moving from that territory to points in Official territory be trimmed to compare favorably with truck rates. The petition, filed with the Western Trunk Line Association, will be heard at Chicago on April 12.

Will Add Sleepers to Three Chicago-Florida Coach Trains

The Chicago & Eastern Illinois, the Illinois Central and the Pennsylvania, together with their cooperating southern roads, will inaugurate a new sleeping car service between Chicago and Miami, Fla.-Jacksonville, on April 22. On that date the first of three all-coach streamliners—the C. & E. I.'s "Dixie Flagler"—will depart from Chicago equipped with three Pullman cars. The Illinois Central's "City of Miami" will be similarly equipped, beginning April 23, and the Pennsylvania's "South Wind" on the following day. Two sleepers on each train will operate to Miami and the third will terminate at Jacksonville.

Outlines Armed Forces Thinking on Transport

Major General Frank A. Heileman, the Army's chief of transportation, last week outlined the National Military Establishment's present thinking and planning with respect to transportation and national defense. The general's address

STEADY SERVICE NEEDS STEADY PATRONAGE

Frank acknowledgement—and fair warning—that good rail transportation must be more than just a stand-by service to be used only in bad weather is contained in the following message, which now appears on the menus of the New York, New Haven & Hartford's grill cars:

"We appreciate your riding with us today and hope you will want to ride with us again—and often.

"We have speeded up all our trains between Grand Central Station and Boston (in both directions). The 'Merchants Limited' makes the trip between Back Bay and Grand Central in 3 hours and 55 minutes. The 'Yankee Clipper' has a 4 hour and 15 minute schedule. From either of these trains you can phone your home or office direct from the lounge car at any time during the trip.

"To maintain hourly service from both Boston and New York we must have more than just the patronage on days when the weather is bad. We will appreciate your realization that continuation of this speedy, reliable, all-weather service is dependent upon continued steady patronage."

was delivered to students of the Fourth Annual Rail Transportation Institute at American University, Washington, D. C. "In present planning," he said, "the principle of coordination of all transportation, land, sea and air has been accepted by the National Military Establishment."

General Heileman went on to explain that "in principle" the Navy will be responsible for sea transport, the Army for land transport and the Air Force for air transport. "In order to control and co-ordinate this three-way operation," he continued, "there has been established a Joint Military Transportation Committee, an agency of the Joint Chiefs of Staff, and composed of two officers from each of the three services, Army, Navy, and Air Force. It will establish transportation policy, doctrine and procedure for the Armed Forces. Also in the National Military Establishment is the Munitions Board which the National Security Act of 1947 places under the jurisdiction of the secretary of defense, to act for him in all industrial matters, including procurement, production and distribution, all of which present a claim for transportation.

"The dominant coordinating agency in the transportation field is the National Security Resources Board, which will coordinate military, war production, and civilian transportation requirements with total available transportation capacity to insure maximum transportation performance during a national emergency."

The chief of the Transportation Corps then noted how these agencies would function, saying: "The Army, Navy and Air Forces will submit their requirements to the Joint Military Transportation Committee, which will screen the requirements in the light of Joint Chiefs of Staff policy and objectives, and pass on the consolidated requirements of the Armed Forces to the Munitions Board. The Munitions Board will add in the war production transportation requirements and pass on the aggregate war requirements to the National Security Resources Board which will add in the additional requirements for continuation of the necessary transportation for civilian economy, and will balance the total transportation requirements against the total national transportation capacity. Since the total requirements will probably exceed the total capacity, all the claimants will probably be allowed a reduced transport lift, the National Security Resources board reserving a quota for civilian economy and allocating the remaining capacity to the Joint Military Transportation Committee, which will then allocate capacity to the Army, Navy and Air Force in proportion to their needs and the relative priority of movement."

Earlier in his address, General Heileman had said that the policy of the Army is "to foster a strong and efficient transportation industry in time of peace' so that "in time of war there will be available an efficient tool for national defense." After declaring that "the best Army in the world, in the wrong place,' and "without the tools of its trade, wins no wars," he said, that "the best Army must be backed by the best industrial procurement, and neither raw materials nor finished products move without transportation."

Noting the dependence of the Army upon the civilian transportation industry to meet war transportation demands, he continued: "If trained and competent civilian personnel are not available at the outbreak of an emergency, the Armed Forces cannot supply the deficiency. If transport equipment is not available at the outbreak of an emergency, I doubt that the deficiency can be made up in the course of a war in view of the diversion of steel and other materials as well as of manufacturing facilities to the production of armament and other special combat requirements. In case of var the transportation requirements of the United States economy will rise. There will be taken from the transportation industry in the United States trained personnel for military service overseas. Maintenance and repair of transportation facilities will be less effective because of lack of trained personnel and necessary critical materials-and with all this a greater work load must be carried. The implication of modern air attack combined with sabotage, may make the United States a theatre of operations, with or without enemy occupation. The answer must be a degree of efficiency in peace time that will permit a readjustment of means to take care of the increased load due to the superimposition of the war requirements. For tunately, the technical ability and efficiency of the transportation industries

of the United States have no equal elsewhere.

General Heileman, meanwhile, praised the performance of the transportation industry during the war and said in closing that "with the coordination and mutual confidence developed during World War II between the Army Transportation Corps and industry, and with the continuance of that relation, the reliance of national defense on the transportation industries of the nation is based on sound experience."

Perlman to Make Month's Study Of Rail Facilities in Korea

Alfred E. Perlman, general manager of the Denver & Rio Grande Western, is scheduled to depart from his headquarters in Denver, Colo., on April 5, for a month's stay in Korea, where he will survey railroad facilities for the Economic Cooperation Administration, in connection with a U. S. government industrial survey. He will fly to Korea via Alaska, the Aleutians and Tokyo, and is slated to talk in the latter city with transportation officers with the occupation forces.

Canadian Roads Ask Fare Increase As Transport Tax Is Abolished

To "obtain a measure of financial relief without it being felt by the public," Canadian railroads have filed with the Board of Transport Commissioners an application for a 15 per cent increase in first-class passenger fares in lieu of the wartime transportation tax of the same amount which was abolished by the Canadian government on March 23.

The fare-increase application was announced by J. A. Brass, general secretary of the Railway Association of Canada, which represents all Canadian railroads. Mr. Brass also said that the railways will file with the board, "as soon as practicable," new tariffs increasing by 15 per cent coach-class and other fares which are now lower than firstclass. His announcement followed a twoday session of the association which considered the effect on the railways of the removal of the transportation tax. The decision to ask for the fare increase followed a policy outlined on January 11 by C. F. H. Carson, association counsel.

As in the United States, Canada's 15 per cent transportation tax was a war measure. Bus, air and inland steamship lines had joined with the railroads in applying to the government for its removal.

Ohio Group Supports Toll-Road Legislation

The Ohio Turnpike Committee, 810 Hartman bldg., Columbus, Ohio, is distributing cards, pamphlets and folders in support of legislation to create a bipartisan five-man Turnpike Commission,

which would have authority to survey, finance, build, maintain and operate toll highways in Ohio.

Some of the arguments advanced by the committee in favor of privately financed turnpikes (toll roads) are: (1) Ohio must spend \$100 million more per year on highways to take care of today's heavy traffic load; (2) traffic on turnpikes saves wear and tear on state highturnpikes assure more state wavs highway funds for secondary and farmto-market roads; (3) turnpikes are safer than ordinary highways; (4) turnpikes are special purpose roads, paid for entirely by their users, but with free state highways still available for those who do not want to pay the tolls; and (5) turnpike tolls will pay costs of construction and maintenance until construction bonds are paid off, when the turnpike will become a free road.

Ernest M. Green is listed as president of the committee; A. C. Neff as first vice-president, and Ralph W. Sanborn as

secretary.

New Mail-Pay Plea Raises Proposed Increase from 65 to 80 Per Cent

The railroads have filed with the Commission Interstate Commerce supplemental mail-pay petition, raising from 65 per cent to 80 per cent the permanent increases in those rates which are sought in the pending proceeding. The 80 per cent advance would be added to the rates in effect February 18, 1947, and would result in an increase of something like 44 per cent in present rates which include the interim increase of 25 per cent that became effective February 1, 1948, and was retroactive to February 19, 1947, the date on which the railroads' original petition was filed.

The proceeding is No. 9200, and the February 19, 1947, petition sought permanent increases of 45 per cent. An amended petition filed June 24, 1948, raised this to 65 per cent, which remained the carriers' permanent proposal until the present 80-per-cent petition was filed. The new proposal is based on the further increases in operating costs which have occurred since the 65-per-

cent petition was filed.

The increases include higher prices of materials and supplies, the 10-centsper-hour increases awarded to operating employees, effective October 16, 1948, and the 7-cents-per-hour increase awarded to non-operating employees, effective October 1, 1948, along with the 40-hour week which will become effective next September 1. Also involved are higher depreciation charges and other items. The total of the increases in costs since the beginning of 1948, plus the rise in depreciation charges since 1940, will become \$1,080,-000,000 per year when the 40-hour week becomes effective, the petition said. "Thus increased," it added, "petitioners' annual operating costs will be 92.7 per cent above the operating costs at the 1940 level and 118.4 per cent above the 1928 level."

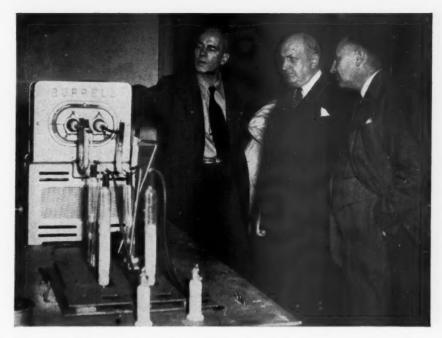
Before it received the new railroad petition, the commission had received from the Post Office Department a petition complaining that the carriers had not carried out to the department's satisfaction their undertaking to cooperate in the development of evidence as to mail-handling costs. The department asked the commission to compel the carriers to produce the "essential evidence"; or, in the alternative, to suspend the interim increase "to the end that government funds not be improvidently paid under an order unsupported by reliable, probative and substantial evidence." In the latter connection, the department's petition alleged that the interim-increase order "was based, in part, upon the railroads' unsupported statement of station labor expense for handling mail which statement was received in evidence over objections of the Post Office Department."

How to Reduce Loss and Damage Demonstrated at Chicago Meeting

A group of industrial packaging engineers teamed up with a drop tester at Chicago last week to illustrate graphically how faulty packaging and handling leads to a high number of loss and damage claims. The engineers dropped packages for about an hour to show that well-packed freight will reach its destination intact, while that not so well packed is apt to reach the consignee in pieces. Watching the tests were several hundred heads of traffic, shipping and packaging departments, who were guests of the Chicago Association of Commerce & Industry at a forum on "How to Reduce Loss and Damage from Faulty Packaging and Handling."

In addition, John W. Barriger, president of the Chicago, Indianapolis & Louisville, pointed out the economic waste resulting from loss and damage; A. L. Green, special representative, Freight Claim Division, Association of American Railroads, discussed what the railroads are doing to reduce claims and to improve service; I. M. Peters, general traffic manager, Corn Products Refining Company, emphasized what shippers can do to eliminate loss and damage; F. F. Dival, director of packaging, Corn Products Refining Company, outlined modern methods of loading packaged goods; and a Swedish motion picture illustrated how railways in that country are combating loss and damage.

The packaging engineers, during their demonstrations, pointed out that the redesigning of certain types of packages is cutting their claims. In illustration, one engineer drop-tested a piece of merchandise packed in a container costing 3 cents and showed that the article was completely shattered. For contrast, he drop-tested the same piece of merchandise in a container costing 6 cents, with no damage whatsoever to the article.



Canadian National's new research laboratories at Point St. Charles, Montreal, Que., getting their first official inspection from R. C. Vaughan, chairman and president. Designed to handle all types of chemical, metallurgical and special tests, these laboratories are expected to play an important part in advancing the science of railroading in Canada. The picture shows A. D. Macpherson, controller of tests and materials research, demonstrating to Mr. Vaughan, center, and S. W. Fairweather, vice-president, research and development, a carbon train for finding the carbon content of ferrous metals

R. E. Farney, packaging engineer, Spiegel, Inc., Chicago, asserted that the railroads can do a lot to improve freight handling, and expressed the opinion that companies "can't go on forever improving packaging to make up for improper handling by the carriers."

Mr. Barriger said, in part: "The skeleton in the railway closet today is loss and damage to property in transit If the treasury of the American railroads were to be looted through an act of thievery of a sum of money equal to railway property damages, it would be recorded as a misfortune of the first importance and the finest abilities and talents and skills in the industry would be immediately directed upon detecting and bringing the evil doers to justice and preventing a repetition of the crime. . . . Let us, therefore, constitute ourselves members of vigilance committees to stop this frightful wastage of national and railway resources . . .

Mr. Green stated that the outlook is favorable for a substantial cut in loss and damage this year, although there was carried over from 1948 about \$23,000,000 in claims paid claimants which had not been processed for inter-carrier distribution. The 1949 claim figure, he added, will be distorted to the extent that these claims are completed and transferred from "suspense" to operating expense. In support of his 1949 forecast, Mr. Green pointed out that (1) first-class shipping containers are now in bountiful supply; (2) there is

a large reduction in over, short and damage reports; (3) the backlog of claims is being rapidly caught up; and (4) shippers, receivers and their trade associations are now taking an extraordinary interest in perfecting adequate container and interior packing protection for fragile goods.

Illustrating the effect of commodity prices on the claim expense, Mr. Green referred to a study made by the Interstate Commerce Commission which showed that, when the 1947 claim total is deflated to the 1939 price level, charges to operating expenses for freight loss and damage were equal to \$62 per million ton-miles for 1939 and \$98 per million ton-miles for 1947—an increase in excess of 52 per cent.

The speaker also pointed out that there were 16.7 per cent fewer claims in 1948 compared with 1947, the figures being, respectively, 4,890,601 and 5,872,542.

New England Roads Reduce Fares for Group Travel

Reductions of from 25 to 50 per cent in round-trip rail fares for groups of 20 or more persons traveling together will become effective immediately throughout New England and in eastern Canada. Party tickets covering the group travel will be good for the return trip during a period of not more than 10 days.

The joint announcement by the Bangor & Aroostook, the Boston & Albany, the Boston & Maine, the Central Vermont, the Maine Central, the New York, New Haven & Hartford and the Rutland stated that the reduced fares are "intended to stimulate group travel by railroad, in preference to travel by bus or private automobiles."

The new party tickets will be sold at any station, with a reduction of 25 per cent from the regular fare for groups of 20 to 299 persons; 37½ per cent for groups of from 300 to 499, and 50 per cent for groups of 500 or more. The fares apply between any two stations on the New England railroads and also will apply to the principal points in eastern Canada served by the Canadian Pacific and the Canadian National.

I.C.C. Defends 12 Examiners Marked for Disgualification

Chairman Charles D. Mahaffie of the Interstate Commerce Commission has advised President Harry B. Mitchell of the Civil Service Commission that members of the I.C.C. are prepared to make personal presentations with respect to the qualifications and abilities of 12 hearing examiners who have failed to win approval of the Civil Service Commission's so-called Board of Consultants. The 12 examiners now on the I.C.C.'s staff are among 42 with various federal agencies whom the board found not qualified to continue in their present positions.

The board, headed by Carl McFarland, Washington, D.C., attorney, is advising the Civil Service Commission in its work of carrying out those provisions of the Administrative Procedures Act, which require it to set up standards and specify required qualifications for the examiner positions.

In his letter to President Mitchell of the C.S.C., Chairman Mahaffie said he understood that the 12 I.C.C. examiners were filing appeals with the C.S.C. from the adverse recommendations of the Board of Consultants. Then came the offer of presentations from members of the I.C.C., which Mr. Mahaffie put this way: "Some of them [the examiners] have worked closely with certain of our members who, as a consequence, are familiar with their characteristics and abilities. It may be that you would find the views of such commissioners helpful to you in your task of passing on these appeals. If this should be the case, I hope you will advise me so that arrangements to that end may be made. In any event, this commission will be glad to cooperate in any way possible to develop the information you require in order to reach a sound conclusion on the merits of each case before a final decision is reached on it."

Meanwhile, the I.C.C. has designated H. L. Underwood and S. R. Howell, attorneys on the staff of its Bureau of Law, to represent the examiners in their appeals. The names of the examiners were not made public by the C.S.C. when it announced the findings of its Board of Consultants; and the only clew to identification in Chairman

Mahaffie's letter was a statement saying that one of them has been engaged in hearing "important sections" of the pending Ex Parte 168 rate-increase case. Mr. Mahaffie's letter also said:

"In setting up job specifications under that [Administrative Procedures] act we agree that there must be standards as to experience, character, and capacity. We believe that we can work out with you an agreement as to such standards. As to the 12 men, they have been examiners for this commission for many years. Some of them have conducted hearings in cases which are among the most complex and important that come before us

"These men, generally, have demonstrated ability to act independently, objectively, and fairly when presiding at hearings, and to prepare decisions or recommendations of high quality. Their manner of dealing with practitioners who appeared before them, and their judicial bearing and demeanor appear to have met with approval and, so far as we know, no serious fault has been found by any practitioner with the ability of any of the group to develop evidence, and to apply the law thereto, in assigned cases. They have served with apparent satisfaction during the now nearly two years they have acted as hearing examiners. Our budget is made to cover their status. They are seasoned men and their displacement would mean a serious loss in the work of this commission."

C. & O. Reduces Equipment Orders

The Chesapeake & Ohio has cancelled orders for 500 70-ton coal cars and 15 2-6-6-2 steam freight locomotives, the approximate costs of which would have been \$5,500,000, R. S. Marshall, senior vice-president, said last week. The coal cars are a portion of orders placed last year with the American Car & Foundry Co. and the locomotives were part of an order for 25 from the Baldwin Locomotive Works. Mr. Marshall added that the C. & O. has cut expenses by \$8,000,-000 this year and that plans to spend \$2,000,000 for small improvement projects also have been cancelled. If applications to discontinue certain branch line service are approved, an additional \$900,000 will be saved. The C. & O.'s coal business in the first two weeks of March was about 30 per cent less than in the comparable weeks last year, Mr. Marshall said, and in the 10 weeks beginning January 1 coal loadings at online mines were down 18 per cent.

Freight Car Loadings

Loadings of revenue freight in the week ended March 26 totaled 596,329 cars, and the summary for that week as roads announced on March 31. This was a decrease of 11,438 cars, or 1.9 per cent, under the previous week, a decline of 67,334 cars, or 10.1 per cent, below the corresponding week last year, and a

drop of 233,063 cars, or 28.1 per cent, under the equivalent 1947 week.

Loadings of revenue freight for the week ended March 19 totaled 607,767 cars, and the summary for that week as compiled by the Car Service Division, A.A.R., follows:

Revenue For the week	Freight Ca		
District	1949	1948	1947
Eastern Allegheny Pocahontas Southern Northwestern Central Western Southwestern	114,439 124,096 19,920 111,005 76,188 105,534 56,585	144,855 156,600 25,926 123,610 79,907 105,528 63,167	165,129 179,606 70,047 139,140 92,380 131,499 66,240
Total Western Districts	238,307	248,602	290,119
Total All Roads	607,767	699,593	844,041
Commodities: Grain and grain products Livestock Coal Coke Forest products Ore Merchandise l.c.l. Miscellaneous	47,092 8,597 45,850 12,252 36,271 13,083	36,133 7,891 80,008 12,768 47,818 15,306 115,889 383,780	53,717 14,142 184,735 14,859 50,585 15,163 124,703 386,137
March 19 March 12 March 5 February 26 February 19	607,767 709,326 705,552 688,128 697,335	699,593 796,486 791,984 790,910 804,937	844,041 841,147 805,775 849,991 776,689
Cumulativa total			

Cumulative total 11 weeks 7,633,312 8,501,318 9,000,913

In Canada.—Carloadings for the week ended March 19 totaled 72,991 cars, compared with 74,194 cars for the previous week, and 76,239 cars for the corresponding week last year, according to the compilation of the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada: March 19, 1949 March 20, 1948 Cumulative totals	72,991 76,239	31,251 39,320
for Canada: March 19, 1949 March 20, 1948	796,939 806,663	350,506 398,062

N. Y. C. to Extend Its Dieselization

The New York Central has completed plans to Dieselize all freight service between the Ohio river and Lake Erie on its Ohio Central division, according to C. F. Wiegele, general manager of the Central's Lines West. The road expects by April 15 to have eight 4-unit 6,000hp. Diesel-electric road freight locomotives operating in both directions on the 242-mi, run between Hobson, Ohio, near Point Pleasant on the Ohio river, and Toledo. By next fall, Mr. Wiegele said, all road freight power between Hobson and Toledo on the Ohio Central is expected to be Dieselized, and by a year or two later Diesel-electric locomotives are expected to take over yard operations.

The table "Selected Income and Balance-Sheet Items of Class I Steam Ralways" appears on page 74.

ORGANIZATIONS

The Northwest Locomotive Association will hold its next meeting on April 18 at 8 p.m., at the Midway Club, 1931 University avenue, St. Paul, Minn. G. V. Beasley of the Westinghouse Air Brake Company will present an address on "The Electro-Pneumatic Air Brake." Color and sound films also will be shown.

Thomas J. Tobin, controller of the Erie, at Cleveland, Ohio, has been appointed general chairman of the midwestern spring conference of the Controllers Institute of America, to be held in that city May 1-3, in the Cleveland hotel.

The Pacific Railway Club has announced the election of S. E. Byler, 121 East Sixth street, Los Angeles 14, Cal., as secretary, to succeed the late William S. Wollner.

An American Institute of Electrical Engineers' conference on the industrial application of electron tubes will be held in the Statler Hotel, Buffalo, N. Y., on April 11 and 12.

The next meeting of the New York Railroad Club will be held on April 20, at 8 p.m., in the Engineering Societies building, 29 West 39th street, New York. Albert J. McIntosh, economist for the Socony-Vacuum Oil Company, will speak on "Recent Developments in the Petroleum Industry." The Chicago Railroad Fair's motion picture, "Wheels A-Rolling," also will be shown.

The Eastern Association of Car Service Officers will hold its next meeting at the William Byrd Hotel, Richmond, Va., on April 21 at 10 a.m. A. H. Gass of the Association of American Railroads will address the meeting.

The principal speaker at the 1949 conference of the American Railway Development Association will be Armstrong Chinn, president of the Terminal Association of St. Louis, whose address will touch upon the dangers of nationalization of industry, with the railways as the first victim. The conferences will be held at the Chamberlin Hotel, near Newport News, Va., April 20-23.

The Canadian Railway Club will hold its next meeting on April 11, at 8 p.m., in Cardy Hall, Mount Royal Hotel, Montreal, Que. Dr. Dwayne Orton will address the meeting on the "The Art of Human Relations."

The Atlantic States Shippers Advisory Board will hold its 78th regular meeting at the Lord Baltimore Hotel, Baltimore, Md., on April 6 and 7. Charles A. Newland, manager, Maryland-Delaware-District of Columbia sales division, Esso-Standard Oil Company, will talk on "Business and Public Relations" at a luncheon sponsored jointly by the board

and the Traffic Club of Baltimore at 12:30 p.m. April 7. H. H. Pratt, of New York, general traffic manager of the Crucible Steel Company of America, and president of the board, will preside.

Le Roy Kramer, retired vice-president of the General American Transportation Corporation, will discuss that firm's history, development and economic significance at the April 8 meeting of the Chicago Chapter, Railway & Locomotive Historical Society, scheduled for 7:30 p.m. at 84 East Randolph street.

SUPPLY TRADE

U. S. Steel Proposes To Split Common Stock

Stockholders of the United States Steel Corporation, at their annual meeting in Hoboken, N. J., on May 2, will be asked to vote on a proposal to change the presently authorized common stock of 15,000,000 shares without par value into 45,000,000 shares without par value. The proposed 3-for-1 split, the company said, is believed to be "in the best interests of the corporation and of its stockholders because the effect, as judged by the experience of other corporations, will be to provide a wider distribution of said shares and make them more readily marketable."

H. L. Kent, formerly manager of the railroad department of the Ingersoll Rand Company, has been appointed assistant to the president of the Standard Railway Equipment Manufacturing Company, with headquarters at New York.

J. J. Lynch, for many years a sales engineer with the Binks Manufacturing Company, has organized the Bay State Spray Equipment Company, with offices and warehouses in Springfield, Mass., and Boston. He will be in charge of all sales and service throughout New England.

The American Brake Shoe Company has announced the expansion of its sales activities in Cleveland, Ohio, by adding sales activities for the National Bearing division to its sales offices at 915 Midland building. L. E. Hoyer and J. Robert Lottes, National Bearing sales representatives, formerly at the Meadville, Pa., plant, will join representatives of the company's Brake Shoe & Castings, Southern Wheel, and Ramapo Ajax divisions in the enlarged office. Their activities will be under the direction of James J. Nelson, eastern sales manager for National Bearing. The company also has announced the retirement of Augustus H. Elliot, vice-president of the Southern Wheel division, after 40 years of service with American Brake Shoe. Mr. Elliot worked in various sales and engineering capacities in Philadelphia, Pa., and New York, for nearly 18 years. Since 1927 he has been a vice-president of the Southern Wheel division and has had charge of engineering and operation for many years. He established the company's Wheel Inspection department, which later was taken over by the Association of Manufacturers of Chilled Car Wheels, and also led in the development of the present chilled freight car wheel.

Stanley M. Hunter, vice-president of sales, American Hoist & Derrick Co., St. Paul, Minn., has been elected to the newly created position of executive vice-president. Expanding business, the company states, has made it necessary to create the new managerial post. Mr. Hunter is a graduate of Albion College,



Stanley M. Hunter

Albion, Mich., and began his business career as an apprentice with the Novo Engine Company in 1919. He served as sales manager with that firm from 1925 to 1936, when he joined the sales department of American Hoist. He has served as vice-president of sales and a member of the board of directors since 1945.

Robert C. Toit has been elected president and a director of the Stromberg-Corlson Company, effective April 4, to succeed R. H. Manson, who has retired to become chairman of the board. Mr. Tait is vice-president of the Mellon National Bank & Trust Co. of Pittsburgh, Pa.

W. E. Lynch has been appointed district manager of the transportation division in the central district of the General Electric Company, to succeed F. W. Peters, who has retired after almost 36 years of service. Mr. Lynch was graduated from the University of Illinois and joined G. E. in 1926. He entered the transportation field in 1928 and has since been occupied with application and design of electric propulsion for all types of motive power. In 1931 he was assigned to the heavy-traction equipment field, where he worked on the Pennsylvania's electrification from New York to

Washington, D. C. He has been active in the application of Diesel-electric power for switching and main-line service since 1939, and was appointed manager of the railway rolling stock division at Erie, Pa., in 1941. He was transferred to Chicago in 1945. Mr. Peters joined G. E. in July, 1913, in the test department. Later, he entered the railway equipment engineering division, from which he transferred to the railway engineering (now transportation) division.

W. S. Huss, who has been associated with the Acme Steel Company for the past 30 years, has been appointed sales manager of the firm's southern division, with headquarters at Atlanta, Ga. He succeeds F. H. Webb, who has retired.

R. B. Putman, whose appointment as general sales manager of the American Lumber & Treating Co. at Chicago, was reported in the Railway Age of March 26, joined that company in 1934 as a trainee in the operating department. He



R. B. Putman

was advanced to advertising manager in 1938 and to sales promotion manager in 1945. In addition to his new assignment, Mr. Putman will continue the duties of his former positions.

Cutler-Hammer, Inc., have announced that the Columbus, Ohio, office, 2700 East Main street, operates as a branch of the Cincinnati, Ohio, district office, under direction of R. D. Yoder; and that the Youngstown, Ohio, office, 25 East Boardman street, is a branch of the New York district office, under direction of E. J. Gove.

The Standard Stoker Company has announced its acquisition of exclusive manufacturing and sales rights to the Chicago Automatic Spreader Stoker for use in stationary boiler plants. The Chicago stoker will be manufactured at Standard's Erie, Pa., division plant.

A. N. Martin, vice-president of the Pyle-National Company, with headquarters at New York, retired on April 1, following 31 years of service with the firm. Mr. Martin was born November 9,

1879, at Covington, Ky. He entered railroad service with the Cleveland, Cincinnati, Chicago & St. Louis (now part of the New York Central System) in 1895 as a clerk at Cincinnati, and, two years later, joined the Baltimore & Ohio as a clerk in the traffic department



A. N. Martin

at Baltimore, Md. He next became assistant to general manager of the Holly River & Addison (now abandoned), and in 1904 rejoined the B. & O. as supervisor of stations and buildings on the staff of the operating vice-president. Mr. Martin became industrial agent in 1914 and, four years later, joined Pyle-National at Chicago as purchasing agent. In 1927 he was elected a vice-president and

placed in charge of the company's New York office, where he remained until his retirement.

OBITUARY

Murray J. Blair, late distributor in Chicago for the Browning Crane & Shovel Co., whose death was reported in the Railway Age of March 19, was born in 1880, at Mansfield, Ohio, where he began his business career with the Ohio Brass Company. In 1907 he joined the Browning Crane & Shovel Co. as chief electrician in charge of the power plant at Cleveland, Ohio. He left the plant in 1922 to represent the company as a salesman, and subsequently became district sales manager, with headquarters at Chicago. Mr. Blair later served as direct sales representative, and was distributor in Chicago at the time of his death.

Carl H. Will, president of Tropic-Aire, Inc., Chicago, died in that city on March 26.

Clifton Slusser, vice-president of the Goodyear Tire & Rubber Co. since 1926, died on March 25. He was 56 years old.

Thomas W. Delanty, vice-president and director of the Apex Railway Products Company, Chicago, died on March 26.

Joseph B. Miller, manager of the New York office of the Electric Service Manufacturing Company, Philadelphia, Pa., died of a heart attack on March 19.

EQUIPMENT AND SUPPLIES

Domestic Equipment Orders Reported in March

Domestic orders for 69 Diesel-electric locomotive units, 13 steam and 4 electric locomotives and 1,260 freight cars were

reported in Railway Age in March. No passenger car orders were reported. The estimated cost of the locomotives is \$17, 052,600 and the estimated cost of the freight cars is \$5,040,000. The accompanying table lists the orders in detail.

During the first three months of 1949, Railway Age has reported domestic orders for 2,985 freight cars and 30 passenger cars, costing an estimated \$15,040,000; and the above-mentioned locomotives at the stated estimated cost.

LOCOMOTIVES

	C. & N.W 43 5 4	Type 1,500-hp. DE. frt. units 1,500-hp. DE. rdsw. units 1,000-hp. DE. ydsw. units 2,000-hp. DE. hump-yd. sw. units	Builde Electro Baldwi Fairba Electro
Mar. 12	C.St.P.M.&O 6	1,500-hp. DE. frt. units	Electro
Mar. 12	Erie 4	1,000-hp. DE. sw. units 1,000-hp. DE. sw. units	Lima-l Baldw
Mar. 12	N. & W 7	2-8-8-2 frt, 2-6-6-4 frtpass.	R.R. S
	P.R.R 3 2 2	4-8-4 pass.	R.R. S Westin Genera
EDELGIIA			

FREIGHT CARS

Mar. 5 C. & N.W. 1,250** 50-ton Box Mar. 19 Ringling Bros.-Barnum & Bailey 10 50-ton Flat

*Experimental.

**250 to be equipped with car-loading devices.

Builder Electro-Motive Baldwin Fairbanks, Morse Electro-Motive Electro-Motive

Lima-Hamilton Baldwin R.R. Shops R.R. Shops R.R. Shops Westinghouse General Electric

Pullman-Standard Haffner-Thrall

DIESEL UNITS IN SERVICE—CLASS I RAILROADS

		eight	Pass	& Freight	т	otal
	Locomo	tive Units	Locon	notive Units		
Horsepower	No.	Total hp.	No.	Total hp.	No.	Total hp.
3.000	13	39,000		66,000	35	105,000
2,000	102	204,000		1.714.000	959	1,918,000
1,800		201,000	36	64,800	36	64,800
1,350 or 1,500	2,955	4,264,050	450	665,550	3,405	4,929,600
	2,700	1,201,000	13	15,600	13	15,600
1,200	80	80,000		28,000	108	108,000
1,000 Less than 1,000	18	11,460		3,780	24	15,240
Less than 1,000			-		-	
Total road loco. units	3.168	4,598,510	1,412	2,557,730	4,580	7,156,240
Switching loco. units (Averaging approx	. 857-hp.	per unit)			3,638	3,119,050
					8,218	10,275,290
Total road and switching units					0,210	10,000

Note:—817 Diesel locomotive units of 653,400 horsepower are estimated to be in service on switching and terminal companies and on Class II and III railroads.

LOCOMOTIVES

Railroad Diesel Locomotive Inventory on December 31

According to statistics compiled by Railway Age, 9,035 Diesel locomotive units were in service on domestic railroads on December 31, 1948, of which 8,218 were owned by Class I railroads, excluding switching and terminal companies, and 817 by terminal and switching companies and Class II and III railroads.

Diesel road locomotive units in service totaled 4,580, aggregating 7,156,240 horsepower — nearly 70 per cent of the total horsepower of all classes of Diesel locomotives in service on Class I railroads.

The Diesel locomotive inventory of Class I railroads was increased during 1948 by nearly 39 per cent — from 5,919 units on December 31, 1947, to 8,218 units on the last day of 1948. This increase included 9 units of 3000 hp.; 260 units of 2000 hp.; 1,323 units of 1500 hp.; and the distribution of the horsepower of Diesel locomotive units on Class I railroads, switching and terminal companies not included, as of December 31, 1948, is presented in the accompanying table.

SIGNALING

The Missouri Pacific has ordered from the General Railway Signal Company a control machine with a 12- by 17-in. panel, equipped with 6 track indication lamps and 4 miniature levers, for control of switches and signals between Council Grove, Kan., and Helmick.

The Southern Pacific has ordered from the Union Switch & Signal Co. materials for installation of an electro-pneumatic car retarder system in its classification yard at Los Angeles, Cal. The orders include 8 Model 31 retarders totaling 948.33 rail ft., 40 direct-acting electro-pneumatic switches, 3 control machines, and housings, relays, rectifiers and transformers for detector track circuits and for self-restoring dragging equipment detectors for checking cars as they go over the hump. Installation will be done by railroad forces.

ABANDONMENTS

Pass, and Comb.

Norfolk & Western.—Examiner Lucian Jordan has recommended that the Interstate Commerce Commission deny this road's application for authority to abandon a 5-mi. branch from Honaker, Va., to Blackford. The N.&W. contends that traffic over the branch is insufficient to justify its continued operation. The application was opposed by local cattle interests who asserted that the additional drive from Blackford to Honaker would result in considerable loss of weight of cattle. The examiner's report stated that the abandonment would result in serious inconvenience to shippers served by the branch, and that the N.&W. had not proved that its continued operation would impose an undue burden upon the company or upon interstate commerce.

Application has been filed with the Interstate Commerce Commission by:

Minneapolis & St. Louis.—To abandon a 5.25-mi. section of main line between Tracy, Iowa, and Fosterdale. The application stated the section was washed out by floods in June, 1947, and that its reconstruction would require heavy capital expenditures over a considerable period of time. In another application, the road is seeking authority to bridge the gap by acquisition of trackage rights over lines of the Chicago, Burlington & Quincy and the Wabash.

Southern Pacific.—To abandon operation of a branch line in California, which will be partially inundated by the federal government's so-called Central Valley project—provided, however, arrangements are made to continue "adequate rail transportation service" for one of the branch's present shippers, the Mountain Copper Company. The line is the S.P.'s Keswick branch, from Redding, Cal., to Corum, 14 mi. A part of the S.P. main line between San Francisco and Portland, Ore., before the latter was relocated several years ago, the branch was formerly owned by the S.P.'s subsidiary, the Central Pacific, which was authorized to abandon all but 0.6 mi. near Redding at the time of the relocation. Some 13.4 mi. of the abandoned portion was then taken over by the federal government, and the S.P. has continued to operate it under contract. In

January, 1947, the government served notice of its desire to terminate the operating contract, and the abandonment application followed. The abandonments now conditionally approved by the commission involve abandonment by the S.P. of operations over the government-owned portion; its abandonment of operation over the 0.6-mi. portion retained by the C.P.; and the latter's abandonment of that segment as line-haul trackage. The segment would be reclassified as yard and siding mileage.

The continued-service condition marks a departure from commission policy in previous cases wherein it refused to require relocations of lines condemned to make way for public-works projects; but the division's report found the present case distinguishable from the previous ones, because the prospective traffic from Mountain's mines will be "sufficient . . . to provide successful and profitable rail operations for a long time in the future." Moreover, the S.P. conceded that the proposed abandonment could not be justified on the basis of prospective financial loss, and left the job of supporting the application to the government's Bureau of Reclamation. The traffic obtained from Mountain consists principally of pyrites shipped from the branch's only agency station, Matheson, Cal., to which they are transported from the company's mining operations by an aerial tram-way. This traffic, together with inbound shipments to Mountain, produced \$754,-100 in "system revenues" for the S.P. during the 28 months ended April 30, 1947, the division's report said.

In its presentation in support of the application, the Bureau of Reclamation introduced results of studies as to possible alternative routes for Mountain's traffic. These investigations turned up suggestions that the traffic could be trucked into Redding (opposed by Mountain as too costly); and alternative suggestions for relocating the railtramway connection. The record thus made by the bureau indicated to the commission that the S.P. would be "warranted" in making the investment necessary to provide for continued service to Mountain. It left to the railroad the decision as to the "manner and means" of complying with the condition. The proceeding was Finance Docket No. 15608, and the division's report followed generally the proposed report of Examiner Paul C. Albus (see Railway Age of November 29, 1947, page 68).

Wobash.—To abandon 11.3 mi. of line, from a point about 2 mi. east of Baylis. Ill., to a point about 2 mi. west of Barry. The abandonment is part of a relocation project which will involve construction of a new 11.2-mi. line on an improved alinement. The line is a section of the road's Kansas City-Buffalo main line, and the commission's report also approved the proposed construction. The abandonment was opposed by Barry and Baylis interests because those two stations on the new line will be approximately 3 and 1 miles, respectively, from the centers of the communities. The commission conceded that Barry and Baylis shippers might be subjected to "some inconvenience and added expense for truck haul," but found this disadvantage "outweighed"

by the advantages of the proposed relocation. "The benefits to a railroad system and the public of relocating a section of main line and abandoning another portion," the report also said, "must be weighed against the inconvenience and loss that such abandonment would inflict upon the communities affected. In this case the elimination of excessive curves and grades will permit heavier train loads and greater speeds which are essential for the efficient and prompt handling of the highly competitive through traffic which the applicant handles," (See Railway Age, December 18, 1948, page 73).

CONSTRUCTION

Will Spend \$3,250,000 to Improve Houston Terminal Facilities

Extensive expansion and modernization of the Houston Belt & Terminal facilities has been agreed upon by the terminal company's four parent railroads—Chicago, Rock Island & Pacific, Burlington Lines, Atchison, Topeka & Santa Fe and Missouri Pacific. The project—subject to final approval by the Interstate Commerce Commission—will involve an expenditure of \$3,250,000. Among the improvements will be the construction of a 370-acre freight yard.

The Houston betterment program was announced by J. D. Farrington, president of the Rock Island, who pointed out that I.C.C. approval of the agreement would mark the end, as an operating organization, of the Burlington-Rock Island, which handles traffic of both roads. "Both the Houston terminal expansion," said Mr. Farrington, "and the development and construction of our (R.I.) freight yard facilities at Kansas City, Kan. (see Railway Age of December 18, 1948, page 72) . . . are technological improvements designed to increase our operating efficiency and to provide Rock Island patrons with greatly expedited 'Rocket' service from the Northwest to the Gulf ports."

\$6 Million for R. I. Line Change

The Chicago, Rock Island & Pacific plans to shorten by 11 mi. its line between Atlantic, Iowa, and Council Bluffs, eliminating heavy grades and curves. J. D. Farrington, president, said the project would cost \$6,000,000.

Atchison, Topeka & Santa Fe.—This road has awarded a contract to Allhands & Briley, Dallas, Tex., for grading, bridging, culvert and fence work in connection with a line change near Marietta, Okla.

Beaumont, Sour Lake & Western.—Examiner J. S. Prichard has recommended

in a proposed report that Division 4 of the Interstate Commerce Commission authorize this road to construct, in the Houston (Tex.) terminal area, a 1.6-mi. line from Gulf Coast, Tex., to a connection with the International-Great Northern near Percival Junction. The report also recommends favorable commission action on the I.-G.N.'s separate application for authority to acquire from the Beaumont trackage rights over 4.5 mi. of line, including the proposed new segment. The proposed arrangements are designed to facilitate interchange of traffic between the two applicants, which are both parts of the Missouri Pacific system. They are also among improvements which the M.P. has planned for the Houston area where it has under way a \$9-million program contemplating, among other new facilities, construction by the Beaumont of a large yard and equipment-repair facilities.

The examiner rejected requests of the Brotherhoods of Railroad Trainmen and Locomotive Firemen & Enginemen for imposition of conditions to protect employees of the Houston Belt. The brotherhoods based the request on their expectations that the new arrangements would result in loss of much of the Belt's switching business. Imposition on the applicants of the conditions sought "would seem to be beyond the commission's jurisdiction," because the Belt "is a separate operating organization and not a party to these proceedings," the examiner said.

Other representations were made in an intervening petition filed jointly by the Chicago, Rock Island & Pacific, the Burlington-Rock Island, the Fort Worth & Denver City, and the Gulf, Colorado & Santa Fe. The representations related to negotiations with the M.P. with respect to proposed changes in the ownership of the Houston Belt, and in the scope of its operations, with a view to further unification of terminal facilities in the Houston area. "As matters now stand," the proposed report said, "it is extremely doubtful that the mere intentions or efforts of the parties to formulate such an agreement should be considered in the determination of the issues in these proceedings."

Terminal Association of St. Louis.—This company has awarded a contract to H. B. Deal & Co., St. Louis, Mo., for construction of a pedestrian subway connecting the Union Station and parking lot, in that city, at an estimated cost of \$35,000.

Wabash.—Division 4 of the Interstate Commerce Commission has authorized this road to construct 11.2 mi. of line to relocate that section of its Kansas City-Buffalo main line from about 2 mi. east of Baylis, Ill., to about 2 mi. west of Barry. The same report authorized abandonment of the present 11.3-mi. line between those points. The relocation will improve grade and alinement. (See Railway Age, December 18, 1948, page 72.)

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Arkansas & Ozarks.—Acquisition. -This recently organized company has applied to the Interstate Commerce Com mission for authority to acquire and operate 69 mi. of the Missouri & Arkan-335 mi. of line, abandonment of which has been authorized by the comraission. The A. & O. would acquire the 65.9-mi. line between Harrison, Ark., and Seligman, Mo., and the 3.16-mi. branch between Freeman, Ark., and Berryville. The commission's final determination that the M. & A. should be permitted to go out of business was made in a December, 1948, order which overruled motions filed on behalf of the state of Arkansas for annulment of the August 9, 1948, order wherein the commission's Di vision 4 had approved the abandonment. That Division 4 order was conditioned upon an agreement by the M. & A. to sell all or any part of its line to any responsible person offering to purchase it for continued operation and willing to pay not less than the net salvage value. permit such arrangements to be made, the commission's December, 1948, order postponed the effective date of the abandonment certificate until April 6. The M. & A. lines have not been in operation since September, 1946, when the receivers gave up and filed the abandonment application after members of the Brotherhood of Railroad Trainmen struck as the result of a wage dispute (see Railway Age of August 14, 1948, page 81).

Bangor & Aroostook.—To Increase Common Stock.—Stockholders of this road will vote on April 19 on proposals to increase the \$50-par common stock from 322,852 shares to 468,000 shares and to authorize the directors to issue the new shares at not less than par. C. M. Hutchins, president, explained the company wants to have the stock available to procure money for various purposes, including retirement of debt maturing July 1, 1951. Stockholders also will be asked to vote to extend the maturity date of the consolidated refunding 4 per cent bonds of 1951 to a date and on terms to be determined by the directors.

Gulf. Mobile & Ohio,-Acquisition of K.C. St. L. & C .- Examiners Jerome K. Lyle and F. E. Grutzik have recommended in a proposed report that Division 4 of the Interstate Commerce Commission approve two applications wherein this road is seeking authority, respectively, to purchase the property of the Kansas City, St. Louis & Chicago, and to assume direct liability for the latter's guaranteed 41/2 per cent, first-mortgage bonds. The Kansas City was part of the former Alton, which operated it under a perpetual lease. It thus came under control of the Gulf when the latter acquired the Alton and assumed the lease. As outlined in the examiners' report, the

proposals made in the present applications contemplate that Gulf will cancel the debts now due it from the Kansas City; terminate the lease; and surrender for cancellation the Kansas City's capital stock, all of which is held by the Gulf. The Kansas City company would then be dissolved, with resultant annual savings of about \$30,000, including \$25,000 in taxes and \$5,000 in corporate expenses. Also, the proposed new set-up is expected to facilitate the financing of capital improvements. The bonds for which the Gulf would assume direct liability (it is now the guarantor) are dated May 31, 1947, and mature May 31, 2022; their indenture includes sinking-fund provisions.

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Interveners contended that favorable commission action on the applications would be adverse to interests they represented-an estate owning \$348,000 of the bonds, received in exchange for Kansas City preferred stock on the consummation of the Alton reorganization. The "perproposed report suggested that haps" the "primary concern" of these interveners related to an agreement "alleged to have been entered into on May 25, 1945," between the Gulf, the Chicago, Burlington & Quincy, and a committee representing preferred stockholders of the Kansas City. The interveners, the proposed report continued, asserted that the agreement provided, among other things, that the Burlington would assume the lease of the Kansas City, acquire its stock, and guarantee its bonds; and that the transactions involved in the present applications "will prevent that agreement from being consummated." A Burlington guarantee, in the opinion of the interveners, would make the Kansas City's bonds worth "considerably more than par," whereas they would be worth "something less" than that prospective value with a Gulf guarantee alone. Meanwhile, the Gulf's position, as summarized by the examiners, was that the agreement in question "was that the agreement in question based on various contingencies and that no further legal obligation now exists with respect thereto," and that "in any event it is not the duty of this commission to enforce private contracts.'

The examiners agreed with the latter statement. In leading up to their favorable recommendations on the applications, they rejected the interveners' contentions with this comment: "The interveners here seek to enlist the aid of this commission in enforcing the alleged agreement at least to the extent of requiring the Burlington to guarantee the Kansas City company's bonds. That carrier is not a party to this proceeding.... The alleged agreement was entered into prior to the commission's determination in Alton R.R. Co. Reorganization, but it was not a question in issue in that proceeding and the plan finally approved and consummated was not contingent upon any private agreements between the parties of the character indicated. If the interveners have any rights under the alleged agreement this commission is not

the proper tribunal to enforce them.... Furthermore, it may be stated that while nothing presented by the interveners is indicative that any of the rights of the bondholders under either the lease or the mortgage would, in any manner, be prejudiced by the transaction herein, if the inherent legality of the transaction is to be questioned, that matter also is one for determination by the courts."

Earlier in their report, the examiners had noted that the commission denied a request of the interveners for postponement of action on the applications until the Burlington's application in Finance Docket No. 16395 is heard. In that application the Burlington is seeking commission approval of trackage-rights arrangements whereby it would use 158 miles of the Kansas City's lines between Rock Creek Junction, Mo., and Francis, and thus establish an improved freight route between Kansas City and St. Louis (see Railway Age of January 1, page 53). The same lines of the Kansas City were involved in a previous application, denied by the commission, wherein the Burlington sought arrangements similar to those it now proposes, and the Atchison, Topeka & Santa Fe sought to obtain a direct Kansas City-St. Louis line (see Railway Age of July 24, 1948, page 101). Transfer of control of the Kansas City from the Gulf to the Burlington and Santa Fe would have been effected if that application had been granted.

Kingsport. — Operation. — Although Division 4 of of the Interstate Commerce Commission has found that public convenience and necessity require operation, in common-carrier freight service, of the 7-mi. line in the Kingsport (Tenn.) area, which the Tennessee Eastman Corporation has leased from the federal government, the division was "unable to find" that public convenience and necessity required the operation by the Kingsport-Eastman subsidiary and sublessee of the line-"primarily because it is a corporation controlled by its principal shipper." These determinations were made in the division's report on the Kingsport's application for authority to operate the line; the report stated that the division would withhold final action for six months to afford the parties an opportunity to present a plan whereby the line would be operated jointly by its connections, the Southern and Clinchfield; or by one of them if the other were not interested. "The Eastman company," the report said, "has stated repeatedly during the course of this proceeding that it would be willing to divest itself of control of the applicant if some other plan for operation of the line as a common carrier could be worked out with the government and this commission.'

The line, now operated by Eastman in switching service, extends from a connection with the Clinchfield at Kingsport to a connection with the Southern at Holston, Tenn. It serves industrial buildings and facilities installed during World War II by the government which is now leasing them to commercial firms, including Eastman, which operated the project during the war and leased the rail line pursuant to the terms of an option clause in its agreements with the government. The Clinchfield, which serves Kingsport exclusively, had previously offered to lease the line "for purposes of storing cars and performing such switching as necessary," the commission's report said. That road and its lessees, the Atlantic Coast Line and Louisville & Nashville, were interveners in opposition to the present application, as was the Chesapeake & Ohio; but the Southern was a supporting intervener.

Operating arrangements which the division indicated it would approve would consist of a plan whereby the Southern, as one party, and the Clinchfield's lessees, as another would acquire equal control of the Kingsport, or, in the alternative, operate the line jointly under a lease direct from the government. A footnote in the report said the direct-lease arrangement "would be preferable ... for the reason that it would permit dissolution of the applicant and thereby obviate the expense of maintaining it as a separate operating organization." If as a separate operating organization.' either of the parties did not desire to participate, the other could acquire entire control of the applicant or lease the line from the government, the report also said.

Minneapolis & St. Louis.—Trackage Rights.—This road has applied to the Interstate Commerce Commission for authority to acquire trackage rights over 20 mi. of Chicago, Burlington & Quincy and Wabash lines between Tracy, Iowa, and Albia. The proposed rights would render unnecessary the reconstruction of a 5.25-mi. section of the M. & St. L. main line between Tracy and Fosterdale, where track was washed out by floods in June, 1947. Authority to abandon the washed-out section is sought in another application filed with the commission.

Pennsylvania.—Proposes Debt Increase.
—Pennsylvania stockholders of record April 14 have been asked to vote May 10 on a proposal to authorize an increase of \$100,000,000 in the road's indebtedness. No negotiations are pending for marketing any securities and it is not yet possible to specify the type of indebtedness which may be assumed under the proposed authorization. The increase, the road said, is necessary to provide funds for capital improvements.

Pennsylvania. — Dividend. — This road has declared a dividend of 75 cents a share on the common stock, payable May 2 to stockholders of record April 2. Last year two dividends of 50 cents each were paid on the common stock.

Sanford Terminal.—Acquisition and Securities.—Division 4 of the Interstate Commerce Commission has authorized this recently organized company to purchase for \$36,000 the railroad property of the York Utilities Company. The 2.44mi. line involved extends from a connection with the Boston & Maine at Springvale, Me., to Sanford. Its operation by the terminal company will be confined to freight service. The division's report also authorized S. M. Pinsly, president, treasurer and a director of the terminal company, to acquire control of it through stock ownership; and it further authorized the terminal company to issue \$75,000 of common stock (750 \$100par shares). The stock will be sold to Mr. Pinsly, who is also controlling stockholder and president of two other shortline roads-the Hoosac Tunnel & Wilmington and the Saratoga & Schuyler-

Southern .- Proposes New Mortgage on East St. Louis-New Albany Lines .-Stockholders of this road, at their annual meeting in Richmond, Va., on May 17, will be asked to vote on a proposal authorizing the company to create a new first mortgage on its East St. Louis, Ill.-New Albany, Ind., line. The bonds to be secured by the new mortgage, after approval by the Interstate Commerce Commission, would not exceed \$12,474,-000 with an annual interest rate not over 4 per cent. The company proposes in this manner to refinance \$12,474,000 St. Louis Division first mortgage 4 per cent bonds maturing January 1, 1951.

Union Pacific.—Trackage Rights.— This road and its lessor, the Los Angeles & Salt Lake, have applied to the Interstate Commerce Commission for approval of amended agreements providing for continuing use of Southern Pacific tracks in Los Angeles, Cal., and Long Beach, and Pacific Electric tracks in Long Beach. The trackage rights are held by the L.A. & S.L. and used by the U.P. as its lessee.

New Securities

Division 4 of the Interstate Commerce

Commission has authorized:
Chicago, Rock Island & Pacific.—To assume liability for \$2,808,000 of series C equipment trust certificates to finance in part 20 Diesel-electric locomotives and 100 hopper cars at a total estimated cost of \$3,757,221 (see Railway Age of February 26, page 58). The certificates, to be dated April 1, will mature in 24 semiannual installments of \$117,000 each, beginning October 1, 1949. The commission's report ap proved a selling price of 99.277 with a 2½ per cent interest rate—the bid of Harriman, Ripley & Co., and Lehman Brothers, which will make the average annual interest cost approximately 2.26 per cent. The certificates were reoffered to the public at prices yielding from 1.25 to 2.45 per cent, according to materials. cording to maturity.

Delaware, Lackawanna & Western.—To

ssume liability for \$3,780,000 of series H equipment trust certificates to finance in part 10 Diesel-electric locomotives, 500 hopper cars and 300 box cars at a total estimated cost of \$4,725,000. As noted in Railway Age of March 12, page 108, the application placed the total estimated cost at \$4,781,300, whereas the commission's report indicates reductions in the estimated cost per hopper car of \$80, from \$4,400 to \$4,320, and per box car of \$41, from \$5,191 to \$5,150, a reduction of \$56,300 in estimated total cost. The certificates will be dated March 15 and will mature in 30 semiannual installments of \$126,000 each, beginning September 15, 1949. The commission's report approved a selling price of 99.176 with a 2½ per cent interest rate—the bid of Halsey, Stuart & Co., and associates, which will make the average annual interest cost approximately 2.63 per cent. The certificates were reoffered to the public at prices yielding from 1.4 to 2.8 per cent, according to maturity.

Spokane, Portland & Seattle.—To as-

sume liability for \$4,500,000 of equipment trust certificates to finance in part 3 Diesel-electric locomotives, 600 freight cars, and 11 passenger-train cars at a total estimated cost of \$6,178,800 (see Railway Age of March 5, page 69). In the same report, the commission granted authority to the Northern Pacific and the Great Northern to assume liability the Great Northern to assume hability as guarantors for these certificates, which will be dated April 1 and mature in 15 annual installments of \$300,000 each, beginning April 1, 1950. The commission's report approved a selling price of 99.83 with a 2% per cent interest rate—the bid of Halsey, Stuart & Co., and associates which will make & Co., and associates, which will make the average annual interest cost approximately 2.41 per cent. The certificates were reoffered to the public at prices yielding from 1.35 to 2.55 per cent, according to maturity.

ANNUAL REPORTS

In previous years, Railway Age has summarized data from railroad annual reports individually in the Financial News columns. This year, such reports will be presented in tabular form, in the belief that this type of presentation will make it easier to locate figures and to make comparisons between different railroads or between different years on the same road. Below are summaries of the first 12 1948 annual reports to be received; others will be published from time to time as additional reports are received.

Railroad	Operating	Operating	Fixed	Net	Current	Current	Long Term
	Revenues	Expenses	Charges	Income	Assets*	Liabilities*	Debt*
Akron, Canton & Youngstown1948	\$5,890,355	\$3,696,456	\$280,635	\$905,879	\$2,419,208	\$1,711,543	\$4,124,280
	5,261,889	3,548,477	267,469	611,817	2,009,728	1,577,467	3,679,930
Atchison, Topeka & Santa Fe1948	526,733,745	387,510,697	6,563,679	62,842,770	240,838,737	103,512,002	221,239,287
	462,699,237	339,217,606	6,696,135	47,743,744	234,078,617	98,795,808	227,271,758
Bangor & Aroostook	15,539,748	10,095,139	557,273	2,384,235	8,233,207	5,351,348	16,616,399
	12,135,677	8,943,986	551,581	1,164,549	4,459,564	2,854,780	14,437,159
Fonda, Johnstown & Gloversville 1948	980,803	843,252	16,141	26,353	389,757	217,671	1,148,730
1947	923,866	788,769	16,508	5,299	367,869	220,376	1,157,280
Gulf, Mobile & Ohio	81,057,930	59,795,192	1,778,585	6,122,072	32,778,093	24,498,157	76,207,772
	73,330,078	55,224,124	1,700,429	4,032,376	27,217,658	20,143,072	70,111,621
Lehigh Valley	80,050,451	63,821,753	7,016,287	3,315,060	24,307,485	8,976,192	100,320,514
	72,670,962	60,410,987	6,750,406	1,482,151d	23,004,827	9,566,535	93,852,721
Norfolk Southern	9,948,123	7,794,698	268,656	437,069	3,436,984	1,905,467	9,504,315
	8,848,073	7,573,089	249,477	1,376,016	3,351,697	1,501,008	10,161,590
Northern Pacific	157,177,311	121,621,589	10,290,251	12,312,411	81,520,299	35,835,349	265,066,229
	142,591,147	112,436,547	10,458,852	13,379,703	79,649,946	35,190,358	270,718,968
Pennsylvania	999,982,900	832,845,977	72,205,533	34,429,934	359,241,987	193,540,659	675,260,267
	903,268,088	789,877,541	71,156,951	7,285,125	253,627,517	166,768,583	642,130,036
Seaboard Air Line	132,695,409	104,324,127	2,089,372	9,965,654	44,608,479	26,291,595	103,353,900
	119,140,955	96,767,098	2,025,168	6,031,916	46,340,527	21,889,071	107,195,700
Southern Pacific	587,462,083	457,229,996	20,332,526	38,759,585	210,026,196	108,282,351	608,858,749
	529,021,013	402,242,476	19,652,939	33,436,587	199,314,422	109,636,560	558,525,531
Union Pacific	437,583,131	321,403,215	5,946,176	67,289,592	208,499,854	108,946,477	237, 5 38,750
	410,053,704	300,454,623	7,487,770	54,447,495	224,048,185	107,022,285	240,710,232

This, too, is a MODERN locomotive



With planned scheduling she can stay on the road 16 and 18 hours a day, 27 or 28 days a month. With proper servicing — and such servicing facilities save more than they cost — she can be turned around in an hour or two. With her modern design, her maintenance costs are low. And with equal attention, she — the modern steam locomotive — will give you more train-miles, more ton-miles, more passenger-car miles per year for each dollar of investment than any other type of motive power.

There is a place for steam, and in this place the modern steam locomotive is doing an outstanding job.

We are continuing to build such locomotives.



DIVISIONS: Lima, Ohio—Lima Locomotive Works Division; Lima Shovel and Crane Division. Hamilton, Ohio—Hooven, Owens, Rentschler Co.; Niles Tool Works Co. Middletown, Ohio — The United Welding Co.

PRINCIPAL PRODUCTS: Locomotives; Cranes and shovels; Niles heavy machine tools; Hamilton diesel and steam engines; Hamilton heavy metal stamping presses; Hamilton-Kruse automatic canmaking machinery; Special heavy machinery; Heavy iron castings; Weldments.

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proposed \$9,690,000 issue, the whole of which would finance in part 27 Dieselelectric locomotives and 20 passengertrain cars (see Railway Age of March 5, page 69). The \$3,165,000 of certificates involved in the present authorization will finance in part 12 of the locomotives expected to be delivered within the next few months. These certificates will be dated March 1 and will mature in 15 annual installments of \$211,000 each, beginning March 1, 1950. The commission's report approved a selling price of 98.57 with a 21/4 per cent interest rate—the bid of Halsey, Stuart & Co. and associates, which will make the average annual interest cost approximately 2.48 per cent. The certificates were reoffered to the public at prices yielding from 1.4 to 2.65 per cent, according to maturity.

Dividends Declared

Atlantic Coast Line.—5% preferred, \$2.50, semi-nual, payable May 10 to holders of record April

25.

Illinois Terminal.—20¢, quarterly, payable May 1 to holders of record April 11.

Norfolk & Western.—4% adjustment preferred, 25¢, quarterly, payable May 10 to holders of record April 13.

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record April 13.

Pennsylvania.—increased, 75¢, payable May 2 to holders of record April 2.

Reading.—50¢, quarterly, payable May 12 to holders of record April 14.

Wheeling & Lake Erie.—4% prior lien, \$1.00, quarterly, payable May 2 to holders of record April 22.

Average Prices Stocks and Bonds

	Mar. 29	Last	Last
Average price of 20 repr	re-		
sentative railway stocks	40.09	38.44	49.51
Average price of 20 repr	e-		
sentative railway bonds	87.04	86.93	86.44

RAILWAY OFFICERS

EXECUTIVE

Ottis O. Albritton, director of purchases and stores of the Illinois Central, with headquarters at Chicago, has been



Ottis O. Albritton

appointed vice-president, purchasing and stores departments. His former posi-tion has been abolished. Mr. Albritton

was born at McComb, Miss., on December 27, 1899, and entered railroad service in October, 1918, as a laborer on the I. C. at McComb. Later he served there as stockman, clerk, stockkeeper, line stockkeeper, foreman and general foreman, until May, 1934, when he was promoted to chief clerk to the division storekeeper, also at McComb. In January, 1940, Mr. Albritton was appointed a special clerk in the office of the general storekeeper at Chicago, and one year later was advanced to division storekeeper at Memphis, Tenn. He was further promoted in August, 1945, to assistant to vice-president, purchases and stores, at Chicago, and became director of purchases and stores in March, 1948. which post he held at the time of his recent appointment.

J. W. Mahanay, whose promotion to assistant to the vice-president of the St. Louis-San Francisco at St. Louis. Mo., with supervision over the industrial and agricultural development departments, was reported in the Railway Age of March 19, entered railroad service with the Frisco in 1916 as a telegrapher and chief dispatcher. He has served continuously with the Frisco, except for



J. W. Mahanay

the period between 1916 and 1919, when he was employed by another road. He returned to the Frisco as an agent, and in 1928 became city passenger agent at Memphis, Tenn. He was later advanced to general agent at Atlanta, Ga., and then to traffic manager at Tulsa, Okla. Mr. Mahanay was transferred to Memphis as traffic manager in 1945, which position he held at the time of his promotion.

Ambrose J. Seitz, traffic vice-president of the Union Pacific at Omaha, Neb., has been elected executive vice-president, and William T. Burns, general freight traffic manager, has been advanced to traffic vice-president.

Mr. Seitz was born on October 29, 1897, at Effingham, Ill., and entered railroad service in 1914 as a clerk in the freight department of the Missouri Pacific at St. Louis, Mo. After holding various clerical positions with the M. P. and

serving during World War I with the War Department in Washington, and in the traffic department of the United States Railroad Administration, he joined the U. P. in 1919 as confidential clerk to the vice-president of traffic. Mr. Seitz subsequently advanced through various posts in the road's traffic de-



Ambrose J. Seitz

partment, becoming general freight and passenger agent at Kansas City, Mo., in 1935; assistant traffic manager at Salt Lake City, Utah, in 1936; freight traffic manager at Omaha in 1940; general freight traffic manager in 1943; and assistant traffic vice-president in 1944. He was further promoted to traffic vicepresident in June, 1946.

Mr. Burns was born at Holyoke, Mass., on June 9, 1895, and began his career



William T. Burns

with the U. P. in 1922 in the stores department of the Omaha shops. He was transferred to the purchasing department in 1923 and to the office of the vicepresident in charge of engineering and maintenance of way in the following year. Mr. Burns went to the general freight office at Omaha in 1926, and in 1928 became a traveling freight agent. He subsequently advanced to freight traffic agent at Chicago in 1930; to general agent, freight department, at New

Overfire Jets※

Eliminate/ Smoke!



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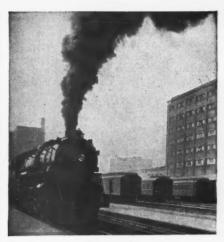
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Overfire air jets with mufflers, as developed and designed by Bituminous Coal Research, Inc., are now being manufactured and sold by the Franklin Railway Supply Company.

These jets are a result of several years' research by B.C.R. in smoke abatement methods. They use steam to induce air into the sides of the locomotive fire-box, above the fire, so as to burn the volatiles from the coal with little or no smoke.

Quotations on Type A or Type B jets will gladly be supplied, together with recommendations on installation in conformance with B.C.R. specifications.



JETS OFF



JETS ON



SMOKE GONE



FRANKLIN RAILWAY SUPPLY COMPANY

NEW YORK • CHICAGO • MONTREAL

STEAM DISTRIBUTION SYSTEM • BOOSTER • RADIAL BUFFER • C'MPENSATOR AND SNUBBER • POWER REVERSE GEARS
AUTOMATIC FIRE DOORS • DRIVING BOX LUBRICATORS • STEAM GRATE SHAKERS • FLEXIBLE JOINTS • CAR CONNECTION

York in 1935; to assistant freight traffic manager at Chicago in 1938; and to freight traffic manager at that city in 1940. In 1944 he was approinted general freight traffic manager at Omaha.

Harry P. Congdon, general superintendent of the Chicago, St. Paul, Minneapolis & Omaha at St. Paul, Minn., has been appointed vice-president and general manager of the Minnesota Transfer and the St. Paul Union Depot at that point, succeeding the late C. S. Christoffer.

G. M. Watson, chief rate clerk in the freight traffic department of the Union Pacific at Omaha, Neb., has been promoted to assistant to vice-president—traffic at that point, succeeding N. B. Marvin, who has been appointed assistant freight traffic manager.

FINANCIAL, LEGAL & ACCOUNTING

L. K. Connell, assistant general solicitor of the Pennsylvania, has been appointed assistant general counsel, with head-quarters as before at Philadelphia, Pa. E. K. Toylor and L. W. Wicks, Jr., assistant solicitors, have been promoted to assistant general solicitors, also at Philadelphia. R. G. Gilmore, chief clerk to the comptroller, has been appointed assistant auditor of passenger traffic at Philadelphia, to succeed the late L. R. Beck.

Robert H. Smith, cashier of the Southern, has been promoted to assistant treasurer, with headquarters as before at Washington, D. C., succeeding M. G. Chew, who succeeds the late J. B. Early, also assistant treasurer. E. W. Rawlins, assistant cashier, has been promoted to cashier, to succeed Mr. Smith.

OPERATING

J. D. Bailey, general yardmaster of the Central of Georgia at Columbus, Ga., has been promoted to the newly-created position of terminal trainmaster at Columbus.

Joseph T. Theby, superintendent of terminals of the Chicago & Eastern Illinois at Chicago, has been appointed superintendent of operations at Oak Lawn, Ill., succeeding W. M. Templeton, who has been transferred to the road's executive offices at Chicago. Mr. Theby will also continue as superintendent of terminals.

J. A. Wright, district roadmaster of the Texas & Pacific at Toyah, Tex., has been appointed trainmaster, Western Division, at Big Spring, Tex., succeeding R. M. Hicks, who has been assigned other duties. J. H. Willioms has been appointed transportation assistant at Dallas, Tex.

Guy R. Buchanan, whose appointment as general manager of the Panhandle & Santa Fe at Amarillo, Tex., was reported in the Railway Age of March 5, was

born in 1893, at Thayer, Kan. He first entered railroad service with the Santa Fe in 1910 as a timekeeper at Chanute, Kan., and later served at that point successively as telegraph operator, dispatcher and chief dispatcher. He was appointed trainmaster in 1937, and two years later was promoted to superintendent, with headquarters at Chanute. In 1940 he was transferred to Emporia, Kan., where he served as superintendent



Guy R. Buchanan

until 1943, when he was advanced to assistant general manager, Northern District, at La Junta, Colo. Mr. Buchanan became assistant general manager at Los Angeles, Cal., in 1946, and was further promoted to assistant to operating vice-president at Chicago in August of that year, which position he held at the time of his recent appointment.

I. P. Iversen, division superintendent of the Northern Pacific at Tacoma, Wash., retired on March 31, and has been succeeded by T. J. Kane, assistant division superintendent at that point. E. M. Price, trainmaster, Tacoma division, has been promoted to replace Mr. Kane, and O. A. Hanson, trainmaster, Minneapolis (Minn.) division, has been transferred to succeed Mr. Price. Mr. Iversen first entered N. P. service in 1910 as general yardmaster at Pasco, Wash., and subsequently became general yardmaster at Seattle, Wash. He was appointed assistant superintendent on the Tacoma division in 1936, and became civilian rail consultant to the United States Army on the North Pacific coast in July, 1942. For his service in the latter position, he received a War Department citation. In September, 1945, he returned to the Tacoma division, and was promoted to division superintendent in January, 1947.

Marion Roberts, whose promotion to superientendent of the Cedar Rapids (Iowa) division of the Chicago, Rock Island & Pacific, was reported in the Railway Age of March 5, first entered railroad service with the Fort Worth & Denver City and served for several years with that road. In 1919 he joined the Rock Island as brakeman at

Amarillo, Tex., and, in 1942, became assistant trainmaster at Amarillo. He was subsequently transferred in that capacity to Oklahoma City, Okla., advancing to trainmaster at Des Moines, Iowa, in 1943. Mr. Roberts returned to Oklahoma City in May, 1947, as trainmaster, the post he held at the time of his recent promotion.

TRAFFIC

John T. Wood, assistant general freight agent of the Baltimore & Ohio, has been promoted to general freight agent, with headquarters as before at Baltimore, Md. Theodore E. Hentz, commerce agent, has been appointed assistant general freight agent at Baltimore.

Mr. Wood was born on September 24, 1893, at Frederick, Md., and entered railroad service in 1911 with the Baltimore, Chesapeake & Atlantic (now Baltimore & Eastern) at Baltimore as clerk in the accounting department. He went with the B. & O. on February 1, 1917, as rate clerk, grain elevator agency at Baltimore, subsequently transferring to the general freight office, where he became

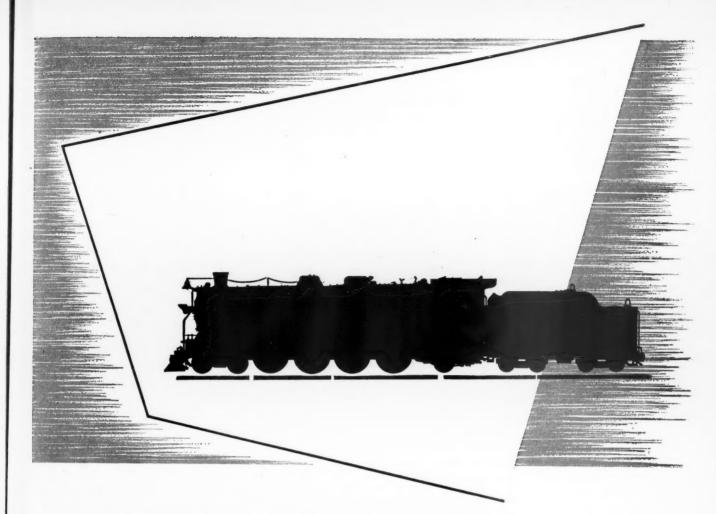


John T. Wood

essistant chief rate clerk on July 1, 1929 chief rate clerk on July 1, 1932, and assistant chief clerk on August 1, 1935. On February 1, 1941, Mr. Wood was appointed commerce agent and 10 months later became chief clerk, freight traffic He was appointed assistant general freight agent on June 1, 1946, which position he held until his recent promotion to general freight agent.

Nicholas E. Brasen, traffic service agent of the Illinois Central at Los Angeles, Cal., has been promoted to general agent at Seattle, Wash., succeeding the late Otto T. Brandt.

L. E. Tenney has been appointed manager commercial development of the Delaware, Lackawanna & Western, and J. A. Corcoron has been appointed industrial agent, both with headquarters at New York. W. J. Nolon has been appointed assistant general freight agent at Chicago.



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ered alti-Ballerk vent , as Balthe James R. MacAnally, assistant freight traffic manager of the Union Pacific at Omaha, Neb., has been promoted to general freight traffic manager at that point succeeding William T. Burns, who has been advanced to traffic vice-president. Norman B. Marvin, assistant to traffic vice-president, has been appointed assistant freight traffic manager.

Mr. MacAnally joined the U. P. traffic department at Philadelphia, Pa., in



James R. MacAnally

1926, and was transferred to Chicago in 1930. He subsequently advanced through several positions at the latter city, and in 1941 was appointed general agent at Milwaukee, Wis. He was further promoted in 1944 to assistant to general traffic manager at Omaha and in 1946 to assistant freight traffic manager.



Norman B. Marvin

Mr. Marvin entered U. P. service in the traffic department at San Francisco, Cal., in 1925, and advanced through various clerical posts until his appointment in 1938 as freight traffic agent. In 1944 he was transferred to Omaha as chief clerk in the service department, and continued in that position until his advancement in 1946 to assistant to traffic vice-president.

R. G. McNeillie, passenger traffic manager of the Canadian Pacific at Mont-

real, Que., whose retirement was reported in the *Railway Age* of March 26, was born on July 1, 1883, at Lindsay, Ont. He joined the C.P.R. in 1901 as a stenographer at Winnipeg, Man., serving in that capacity until 1903, when he became refund clerk. Mr. McNeillie was appointed rate clerk in 1904 and



R. G. McNeillie

chief clerk in 1906, both at Winnipeg. In January, 1910, he became district passenger agent at Nelson, B. C., transferring to Calgary, Alta., three months later. He was appointed assistant general passenger agent at Winnipeg in 1913, general passenger agent there in 1922, and assistant passenger traffic manager, Eastern lines, at Montreal in 1930. Mr. McNeillie was promoted to passenger traffic manager at Montreal in July, 1937.

lan Warren, whose appointment as passenger traffic manager of the Canadian Pacific at Montreal, Que., was reported in the *Railway Age* of March 26, was



lan Warren

born at Montreal on July 27, 1904, and entered railroad service in 1920 in the office of the chief engineer of the C.P.R. During 1923 he engaged in engineering construction work, becoming secretary to the assistant passenger traffic manager in 1924. Three years later he was

appointed assistant chief clerk in the passenger traffic department and in 1930 he became assistant to the overseas passenger manager, being promoted to overseas passenger manager in 1939. Mr. Warren was appointed assistant passenger traffic manager at Montreal in 1942, which position he held until his recent promotion.

- H. C. Millman, industrial agent in the office of the vice-president—traffic of the Pennsylvania, has been appointed industrial agent of the Eastern region, at Philadelphia, Pa., succeeding B. K. Wimer, who has retired. D. B. Lenny, division freight agent at Columbus, Ohio, succeeds Mr. Millmam.
- E. A. Russell, general agent of the Grand Trunk Western at New York, has been transferred to Toledo, Ohio, succeeding W. F. Schroeder, who has retired.
- E. C. Rosmussen, chief clerk in the freight traffic department of the Union Pacific at Omaha, Neb., has been promoted to general freight agent, at Los Angeles, Cal., succeeding William H. Mc-Cune. who has retired.

MECHANICAL

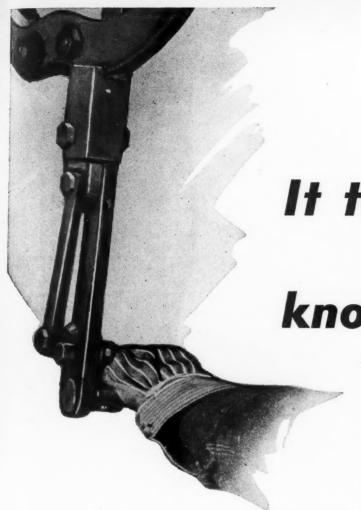
Howard Hill, whose appointment as superintendent motive power and rolling equipment of the Reading at Reading, Pa., was reported in the Railway Age of March 12, was born at Philadelphia, Pa., on June 15, 1890, and entered the service of the Reading as a machinist in 1914, at Philadelphia. He was promoted



Heward Hill

to assistant foreman in 1917; to enginehouse foreman at Philadelphia on January 1, 1933; assistant master mechanic on September 1, 1936, and to master mechanic of the Philadelphia division on July 1, 1938. Mr. Hill became assistant superintendent of motive power and rolling equipment at Reading in January, 1942, and was appointed superintendent of shops in 1944, which position he held until his recent promotion.

C. G. Williams, Diesel supervisor of the Chicago, Rock Island & Pacific, at Kansas City, Mo., has been appointed



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John Gogerty, general superintendent of motive power and machinery of the Union Pacific at Omaha, Neb., has retired after nearly 50 years of railroad service. Mr. Gogerty was born in 1884, at Decatur, Ill., and began his railroad career as a machinist apprentice with the Grand Trunk at Montreal, Que. After completing his apprenticeship, he was employed as machinist and roundhouse foreman by a number of railroads including the Wabash, the Denver & Rio Grande Western, the Missouri Pacific and the Chicago, Rock Island & Pacific. In 1918 he joined the U. P. as a roundhouse foreman at Kansas City, Kan., and later served with that road at Marysville Kan., Salina, Junction City, Pocatello, Idaho, Laramie, Wyo., Green River, Cheyenne and Omaha. He advanced through the positions of district foreman, general foreman, master mechanic and superintendent of shops and, in 1936, was promoted to assistant general superintendent of motive power and machinery at Cheyenne. He was transferred



John Gogerty

to Pocatello in 1938 and to Omaha in 1939, and was appointed superintendent of motive power and machinery in April, 1940. Mr. Gogerty became general superintendent of that department in March, 1942.

ENGINEERING & SIGNALING

The following changes have occurred in the engineering department of the New York Central System: G. W. Deblin, assistant division engineer, Columbus, Ohio, transferred to the Michigan Central at Detroit, Mich.; J. D. Frazer, assistant division engineer, Bay City, Mich., transferred to Jackson, Mich.; G. V. Coffey, bridge and building supervisor, Jackson, promoted to assistant-division engineer at Bay City; and H. L. Riser, assistant engineer, Chicago, promoted to assistant division engineer at Columbus.

PURCHASES and STORES

John H. Seim, district storekeeper of the New York Central at West Albany, N. Y., recently retired, after 50 years of service. He has been succeeded by J. W. Hickey.

Fred H. Blood, division storekeeper of the Southern at Bristol, Va., has been transferred to South Richmond, Va., succeeding Joseph E. Seiller, who has been transferred to Columbia, S. C.

SPECIAL

William J. Davis, police captain of the New York Central at Buffalo, N. Y., has been promoted to police chief of the Big Four district at Cincinnati, Ohio, succeeding Charles D. Phillips, who has been transferred to Mattoon, Ill., as police captain, at his own request. Mr. Davis, who now has charge of the company's entire Big Four district, with the exception of Columbus, Ohio, has been succeeded by Joseph H. Hertzel.

R. E. Black, supervisor wage schedules of the Pittsburgh & Lake Erie and the Lake Erie & Eastern, has been appointed superintendent personnel, with head-quarters as before at Pittsburgh, Pa., succeeding John T. Johnston, deceased. C. D. Johnston has been appointed supervisor wage schedules, succeeding Mr. Black.

OBITUARY

Otto T. Brandt, general agent of the Illinois Central at Seattle, Wash., died recently.

C. S. Christoffer, vice-president and general manager of the Minnesota Transier and the St. Paul Union Depot, at St. Paul, Minn., died recently.

Mr. Christoffer was born on June 29, 1882, at Stoughton, Wis., and entered railroad service in 1898 as a bill clerk for the Chicago, Milwaukee, St. Paul & Pacific; the following year he became telegrapher and station agent. From 1902 to 1918, he served successively as train dispatcher, trainmaster and assistant superintendent. He was subsequently promoted to superintendent and was advanced to general superintendent in 1925. In 1938, Mr. Christoffer joined the St. Paul Union Depot as general superintendent and in 1939 became vice-president and general manager of that company and also of the M. T. at St. Paul.

John T. Johnston, superintendent personnel of the Pittsburgh & Lake Erie and the Lake Erie & Eastern at Pittsburgh, Pa., who died of a heart attack on February 17, had been a life-long resident of Beaver Falls, Pa. He was born on October 23, 1898, and began his career with the P. & L. E. as a baggage master at Beaver Falls on July 27, 1917. He became a ticket clerk on August 11,

1918, and worked at various points on the road until 1923 when he was employed by the Internal Revenue Department of the United States Government. Mr. Johnston returned to the P. & L.E. as a clerk to the supervisor of wage schedules on August 1, 1933, and remained in that capacity until he was appointed supervisor of wage schedules on January 1, 1943. He was appointed superintendent personnel on July 1, 1947.

Thomas F. Dixon, late vice-president—operations of the Great Northern at St. Paul, Minn., whose death was reported in the Railway Age of March 26, entered railroad service with the G. N. in 1900 at Superior, Wis. He later served in various positions in the operating department at Seattle, Wash., and Spokane, and in 1927 was appointed assistant superintendent at Whitefish, Mont. The following year Mr. Dixon was advanced to superintendent at Klamath Falls, Ore.,



Thomas F. Dixon

which position he also held later at Havre, Mont., and Great Falls. In 1942 he became general manager, Lines West, with headquarters at Seattle, and the next year was appointed vice-president and general manager of the Spokane, Portland & Seattle (owned jointly by the Great Northern and the Northern Pacific), at Portland, Ore. Mr. Dixon was appointed vice-president—operations in March, 1947.

H. N. Ricks, fuel supervisor of the Texas & Pacific, died on March 27, at Fort Worth, Tex.

H. M. Lull, who retired in April, 1945, as executive vice-president of the Southern Pacific Lines in Texas and Louisiana, with headquarters at Houston, Tex., died on March 23 at Berkeley, Cal. Mr. Lull entered S. P. service in May, 1906, as a draftsman in the district engineer's office at San Francisco, Cal., and later held positions as assistant engineer, draftsman and computer, assistant division engineer, division engineer, chief engineer and assistant to the president. He was elected executive vice-president in 1927, and continued to serve in that post until his retirement.

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Freight Operating Statistics of Large Steam Railways—Selected

H

Great Lakes Region

Central Eastern Region

					Locomo	tive miles	Car-r	Car-miles		(thousands) Road locos. on line			
	1	Region, road and year	Miles of	Train-	Principal and helper	Light	Loaded (thou- sands)	cent		Net rev. and non-rev.	Service		в.о.	Percent B.O.
6	9 = [Boston & Albany1948	362 362	118,832 147,865	123,517 162,116	11,847 25,354	3,144 3,309		206,241 210,086	84,554 86,259	51 72	2 3	28 19	34.6 20.2
E	egion	Boston & Maine1948	1,746 1,746	320,563 327,234	333,549	16,522	11,487 11,822	64.2	763,949	310.641	95 99	3	9	8.3 8.1
Ne	Re	N. Y., N. H. & Htfd1948 1947	1,769 1,815	336,264 343,924	339,266 658,810 650,078	48,121 60,086	12,869 13,370	68.7	735,718 794,596 789,546	354,935 355,330	195 192	14 16	$\begin{array}{c} 21 \\ 31 \end{array}$	$\frac{12.5}{14.8}$
	(D	Delaware & Hudson1948	794 794	282,566 298,516	345,824 359,835	37.646 36,666	12,188 12,807	65.6 70.7	877.927 916,163	450,358 506,869	128 125	36 27	22 33	11.8 17.8
-		Del., Lack. & Western1948	967 970	291,547 334,413	329,844 380,718	36,244 45,058	12,667 13,538	68.5	845,485 900,692	389,001 413,359	101 105	31	15 24	10.2 17.6
Region	E	rie	2,229 2,229	638 767	669,290 782,028	46 273	33,158 36,601	66.0 67.5	2,170,185 2,363,682	920,789	218 273	68 13	63 76	18.1 21.0
s Re		rand Trunk Western1948 1947	971 972	736,213 251,178 304,244 288,172	258,706 314,468	58,879 2,220 2,925	7,935 9,136	63.5 65.9	530,590 591,793 864,648	222,671 253,156	61 66		9	11.6 12.0
ake	1	ehigh Valley	1,239 1,239 10,337	332,323	306,778 368,163	31,746 51,214 227,061	12,634 13,735 111,362	68.1 68.8	924,020	447,093	81 102	13 10	18 52	16.1 31.7
atI		ew York Central1948	10,338	3,280,576 3,499,278	3,743,626	261,410	124,865	63.7	8,009,016 8,703,585 1,669,582	3,636,560 4,087,284	1,046 1,071	108 10 8	313 305 17	21.3 22.0 9.9
Great	1	ew York, Chic. & St. L 1948 1947 itts. & Lake Erie 1948	1,656 1,656 221	3,499,278 658,292 690,183 99,948	700,223 101,458	8,575 10,048	25,000 26,303 3,937	65.0 68.2 62.3	1,702,034 339,085	726,030 759,661 195,701	146 153 31		16 13	9.5 28.3
		7abash	223 2,381	106,103 632,721	108,156 647,190	37 15,001	3,956 $21,378$	60.6 69.0	347,282 1,376,822	199,118 592,698	32 155	2 8	12 39	26.1 19.3
	1	1947 altimore & Ohio	2.381	667,048 1,881,691	684,975	15,694 252,198	23,476 63,435	71.2 60.8	1,492,599	656,564	159 821	10 72	33 222	16.3 19.9
=		entral of New Jersey* 1948	6,099	2,131,733 79,650	2,627,299 79,866	306,260 5,090	70,417 2,934	62.2 67.7	5,265,679 219,329	2,590,097 115,359	855 41	1	272 15	24.1 25.0
Region	C	entral of Pennsylvania1947	418 212	76,835 80,462	80,837 87,579	8,790 12,847	3,094 2,841	67.2 67.5	228,014 213,294	121,636 114,323	51 44		13 11	20.3 20.0
		1947 hicago & Eastern Ill1948	213 909	77,865 148,861	87,565 149,414	14.825	$\frac{3,020}{4.927}$	71.5 66.9	219,652 333,788	121,258 $164,250$	44 39	12	12 17	21.4 25 0
ster	}	gin, Joliet & Eastern1948	909 238	182,561 101,545	184,792 $102,142$	4,282 3,754	5,621 3.684	$69.2 \\ 65.5$	378,121 $285,194$	189,873 153,433	58 37	· 6	12	$\frac{.17.1}{2.3}$
Central Eastern	Pe	ennsylvania System1948	391 10,042	125,750 3,497,178 3,871,748	132,178 3,903,318	4.218 467,453	3,778 131,458 143,123	65.9 61.9	291,081 9,620,179 10,147,179	156.075 4,609,240	55 1,644	76	258	6.7 13.0
ntre	Re	1947 eading	10,023 $1,337$ $1,355$	416,370	435.792	562,772 32,709	143,123 15,110 17,581	65.6 63.4	10,147,179 1,198,382 1,369,700	649,832	1,841	5 23	318	14.7
Ö	W	estern Maryland	1,355 837 837	490,090 194,484	538,237 241,421	59,531 39,257	7,125 7,982	65.4 60.6 60.5	596,753	760,009 326,498	219 150	17 9 5	33 14 14	12.3 8.1 8.2
Man .	on	Chesapeake & Ohio1948	5,034	234,087 1,503,740	282,655 1,625,899	40,653	59,739	56.0	680,749 5,099,629	375,481 2,775,198	151 628	32	73	10.0
Poca	Region	Norfolk & Western1948	4,987 2,107	1,741.617 1 776,726	826,619	83,864 62,374	67,427 33,869	55.7 57.2	3,019,988		639 266	6 32	61 15	8.6 4.8
-		lantic Coast Line1948	2,107 5,550	842,707 967,825	909,613 988,394	71,637 15,497	36,340 23,659	57.7 59.7	3,197,010 1,663,077	718,315	270 392	23	20 80	6.4 16.9
	Ce	entral of Georgia1948	5,555 1,783	975,681 1 277,138	280,203	16,388 4,678	25,272 6,911	69.5	1,744,633 459,542	758,847 215,414	365 101	12 2	46 8	10.9 7.2
ion	Gu	olf, Mobile & Ohio	1,782 2,847 2,846	295,743 349,154	301,117 349,396 388,545	5,657 810 740	7,199 15,313 16,600	70.2 71.1	472,112 992,917	222,644 466,321	91 104 121	17 11	12 9 15	$\begin{array}{c} 11.2 \\ 6.9 \\ 10.2 \end{array}$
Region	Illi	inois Central	6,552 6,581	382,000 1,474,541 1 1,565,255 1	,477,225	51,730 54,093	50,573 54,317	$72.4 \\ 62.5 \\ 63.5$	1,088,800 3,574,708 3,801,210	538,139 1,667,572 1,779,374	564 570	19 11	72 73	11.0 11.2
	Lo	uisville & Nashville1948	4,750 4,750	1,400,047 1 1,654,405 1	,500,773	37,413 52,583	34,519 41,007	62.1 63.1	2,516,399 3,011,414	1,268,306	402 413	25	57 71	11.8
Southern	Na	sh., Chatt. & St. Louis 1948	1,051 1,051	264,090 312,989	271,849 335,260	7,453 9,697	6,168 7,197	79.6 73.4	401,185 458,161	189,289 216,031	75 86		5 18	$\frac{6.3}{17.3}$
Š		aboard Air Line	4,142	799,232 883,401	842,956 942,751	12,894 $13,172$	23,914 24,574	63.8 63.3	1,682,699 $1,700,722$	747,452 $744,828$	278 306	6	41 44	$12.6 \\ 12.6$
	Sou	uthern	6,382 6,449	1,537,990 1 1,754,808 1	,557,908 ,784,335	$28.559 \\ 32,391$	40,010 45,547	54.2 67.6	2,672,407 2,953,129	1,163,361 1,318,661	527 545	18 16	117 98	$17.7 \\ 14.9$
	Ch	icago & North Western 1948 1947	8,073 8,055	988,340 1 1,003,867 1		27,580 24,946	29,355 31,075	$62.6 \\ 68.2$	2,079,014 2,095,352	910,005 963,325	345 370	21 13	107 103	$\frac{22.6}{21.2}$
egion		icago Great Western1948	1,445 1,445	188,866 254,077	191,220 254,908	11,370 9,177	8,643 9,026	65.9 67.0	570,653 600,271	244,568 261,750	53 62	3	18 20	25.4 23.5
24		1947	0,663	1,475,188 1, 1,605,829 1	,687,876	58,236 75,395	45,488 48,788	62.6 62.1	3,194,636 1 3,435,506 1	1,531,857	477 492	34 30	79 94	13.4 15.3
Northwestern		ic., St. P., Minn. & Omaha. 1948	1,606 1,606	221,147 245,952	236,048 262,435 41,288	14,469 14,532	5,547 6,135	67.0 65.0	386,992 435,150	176,033 194,994	80 78 20	1 16	34 33 18	29.6 29.7 33.3
TWes		luth, Missabe & Iron Range 1948 1947 eat Northern1948	575 569 8,240	41,204 39,202 1,035,473 1,	39,422	751 941 48,931	$971 \\ 958 \\ 34,626$	51.7 57.6 64.3	81,086 70,468 2,435,748 1	42,041 37,147	26 352	8 67	25 54	42.4 11.4
ort		1947	8,237 4,179	1,190,181 1,	195,072 422,926	56,407 7,845	39,338 12,157	61.2	2,799,996 1 813,467	,242,850 365,296	374 125	33	73 18	15.2 12.6
4		1947	4,180 6,593	466,017	478,363 843,658	10,275 50,006	12,520 29,048	66.9 67.0	828,785 2,007,229	386,087 935,535	126 334	36	15 53	10.6 12.5
(1947	6,613	920,092 2,839,319 3,	972,185	54,239	33,614 102,889	65.2 64.9	2,386,661 1	,110,697	344	19 106	54 130	12.9 13.7
Region	Chi	G. C. & S. F. & P. & S. F.) .1947 1	3,104	3,048,286 3, 1,241,936 1,	219,500	148,702 44,949	109,293 48,036	67.3 60.7	6,977,445 2 7,208,987 2 3,450,731 1	,912,440 ,532,976	763 392	67 63	129 87	13.5 16.1
		ic., Rock I. & Pac 1948	8,670 7,600	1,470,091 1, 1,122,267 1.	522,919 158,006	51,997 12,853	55,177 35,443	61.6 59.7	3,935,839 1 2,508,156 1	,764,154 ,067,651	453 288	15 27	67 70	12.5 18.2
estern		1947 nver & R. G. Wn	7,618 2,443	1,275,272 1, 376,405	320,094 422,128	18,261 59,972	39,495 12,728	$62.7 \\ 73.5$	2,704,203 1	,171,183	290 144	13 27	86 45	22.1 20.8
Wes		thern Pacific	2,466 8,090	438,884 1,922,828 2,	500,778 108,313	65,020 353,373	13,576 77,649	74.2 67.3	920,320 5,197,211 2 5,725,603 2	467,014	158 742	31 14	46 169	19.6 18.3
		on Pacific	8,109 9,751	1,922,828 2, 2,190,298 2, 2,317,845 2, 2,674,015 2,	448,697 403,907	439,296 171,884	86,331 89,747	68.2 65.1	5,725,603 2 6,141,121 2	,450,278 2,758,895		12 106	200 153	21.7 19.0
Cen	Wes	stern Pacific1948	1,192	215,439	235,683	203,177 23,648	99,201 9,387	65.0 75.2	6,141,121 2 6,845,098 3 582,342	264,274	695 62 65	8 44 39	87 18 21	11.0 14.5 16.8
-	Inte	ernational-Gt. Northern*1948	1,192	206,019	275,239 206,586	29,686 1,023	10,900 6,532	64.2	462,844	210,997	62		9	12.7
uo	Kar	nsas City Southern 1948	1,110 885 885	198,180	270,914 200,222 205,881	862 959 1,665	6,848 9,391 8,863	64.1 66.6	482,973 665,040 507,606	212,511 320,344 280 022	76 43 46	6 3	13 5 9	9.3 15.5
Region	Mo.	-KansTexas Lines1948	885 3,241 3,241	633,970	205,861 645,658 499,586	9,041 8 803	8,863 18,776 15,664	67.6 58.5 64.7	597,606 1,349,344 1,028,796	280,922 587,551 447,668	129 121		25 35	16.2 22.4
	Mis	souri Pacific* 1948	6,981 6,985	1,485,244 1, 1,574,746 1,	525,225 621.793	28,934 38,012	47,836 51,937	61.4 62.8	3,413,605 1 3,608,349 1	,481,053	400 429	• •	53 71	11.7 14.2
vest		as & Pacific,	1,852 1,852	461,717 561,440	161,717 561,440	15,373	15,311	62.6 61.6	1,053,029 1,211,810	436,265 513,313	102 117	4	10	8.6 6.3
#		Louis-San Francisco 1948	4,615 4,615	823,862 944,157	839,381 982,740	11.489	23,319	62.2	1.599.098	697,206 718,937	299 291	12 7	40 34	11.4 10.2
		Louis Southw. Lines1948	1,562 1,568	408,459 405,096	110,315 108,511	5,551 5,641	15,147 15,782	68.9 74.6	967,187 941,741	432,345 420,971	86 86	8	10 11	9.6 10.7
-	Tex	as & New Orleans 1948	1,314 1,314		915,659 994,796	19,190 19,058	25,757	66.3 73.3	1,775,259	783.023 805,113	216 221	:://	31 28	12.6 11.2

			Freight c	ars on line		G.t.m.per train-hr.	G.t.m.p	er Net	Net ton-mi	Net ton-mi.	Car	Net	Coal	Mi.
	Region, Road and Year				Per	excl.locos.			per 1'd.		miles per car-	daily ton-mi. per	1000 g.t.m.	loco.
	/ P 0 4 19		Foreign		B.O.	tenders	tenders	mile	mile	day	day	road-mi.	inc. loca	day
3	Boston & Maine	274 208	5,611 6,152	5,885 6,360	0.6	28,881 21,694	1,750 1,432	717 588	26.9 26.1	473 480	28.1 28.5	7,535 7,687	167 198	61.8 72.1
1	1941	1,615 1,276	10,218 11,375	11,833 12,651	2.7 2.1	38,819 33,357	2,389 2,253	971 986	27.0 27.2	819 829	47.2 42.9	5,739 5,946	107 114	110.8
2	5¤ N. Y., N. H. & Htfd	1.682 1,161	17,609 21,021	19,291 $22,182$	1.3 1.2	34,542 31,107	2,366 2,304	$\frac{1,057}{1,037}$	27.6 26.6	562 517	$29.7 \\ 26.9$	6,472 6,315	73 88	102.5 99.0
	Delaware & Hudson	3,813 2,292	5,328 7,046	9,141 9,338 16,775	$\frac{4.0}{2.8}$	56,458 55,270	3,123 3,083	1,602 1,706	37.0 39.6	1,533 1,779	63.3 63.6	18,297 20,593	107 116	70.9 74.4
	Del., Lack. & Western 1948	5,933 3,549	10,842 13,400	16,949	4.4 3.3	44,617 41,757	2,952 2,743	1,358 1,259	30.7 30.5	793 818	37.7 38.8	12,977 13,747	114 125	$87.2 \\ 110.2$
Region	5 Erie1948 1947	9,346 5,454	17,679 24,069	27,025 $29,523$	5.7 4.0	55,734 51,464	3,419 3,233	1,451 $1,426$	27.8 28.5	1,067 1,133	58.3 58.9	13,326 15,092	110 111	71.7 80.5
2	1947	5,092 3,839	8,021 11,686	13,113 15,525	8.6 5.7	42,683 36,881	$\frac{2,125}{1,961}$	892 839	$\frac{28.1}{27.7}$	554 540	31.1 29.6	7,397 8,402	73 75	$127.4 \\ 148.1$
4	Lehigh Valley	8,853 5,588	11,556 $13,491$	20,409 $19,079$	10.8 6.8	56,799 51,400	3,061 2,847	1,465 1,378	$32.7 \\ 32.6$	676 761	30.3 34.0	10.771 11,640	60 119	99.4 86.1
at I	1947	63,767 46,210	90,224 114,906	153,991 161,116	$\frac{3.9}{2.9}$	39,530 37,433	$\frac{2,480}{2,521}$	1,126 1,184	$\frac{32.7}{32.7}$	755 836	38.5 40.1	11,348 12,754	117 122	$91.4 \\ 103.2$
Gre	New York, Chic & St. L1948	2,436 2,044	12,563 $12,419$	14,999 14,463	1.9	49,459 46,501	$\frac{2,552}{2,479}$	1,110	$\frac{29.0}{28.9}$	1,466 1,586	77.6 80.4	14,143 14,798	94 102	135.6 145.4
	Pitts. & Lake Erie1948 1947	5,402 $3,326$	11,867 $10,438$	17,269 $13,764$	5.7 5.2	50,362 48,140	3,401 3,284	1,963 1,883	49.7 50.3	382 488	12.3 16.0	28,565 28,803	110 114	73.1 84.6
	Wabash1948	7,342 4,984	$12,091 \\ 15,165$	19,433 $20,149$	$\frac{3.1}{2.3}$	44,982 44,781	2,197 2,258	946 993	$27.7 \\ 28.0$	984 1,040	$51.4 \\ 52.2$	8,030 8,895	121 120	111.0 116.7
		51,746 37,575	39,093 44,254	90,839 81,829	7.0 6.2	$33,900 \\ 30,455$	2,611 2,524	1,261 $1,241$	36.7 36.8	844 964	$37.8 \\ 42.1$	12,346 13,699	154 166	76.4 86.9
ion		814 642	10,137 10,570	10,951 $11,212$	4.3 3.6	40,222 44,177	2,864 3,083	1,506 1,645	39.3 39.3	356 367	13.4 13.9	8,967 9,387	103 121	71.1 74.7
Region	Central of Pennsylvania1948	1,312 814	3,457 4,249	4,769 5,063	5.6 7.3	37,825 39,154	2,852 2,946	1,529 1,626	40.2 40.2	830 762	30.6 26.6	17,395 18,364	149 143	69.3 68.3
E		2,466 1,780	2,673 3,892	5,139 5,672	5.5 2.3	37,862 36,530	2,252 2,088	1,108 1,049	33.3 33.8	981	44.0 44.3	5,829 6,738	117 126	77.8 89.2
Cast	Elgin, Joliet & Eastern1948	6,311 5,588	12,456 $13,056$	18,767 18,644	2.0	19,252 13,933	2,998 2,473	1,613 1,326	41.6	273 278	10.0	20.796 12,876	223 159	110.0 112.3
Central Eastern	Pennsylvania System1948 13 1947 10	33,854 08,420	111,660	245,514 236,152	8.7 9.9	38,260 35,393	2,837 2,714	1,359 1,326	35.1 34.6	607 662	28.0 29.1	14,806 15,958	122 128	77.1 79.3
ent	Reading1948	13,101 9,219	19,555 25,886	32,656 35,135	5.6 3.3	36,194 34,230	2,882 2,809	1,563 1,559	43.0 43.2	646 688	23.7 24.3	15,679 18,093	98 119	$72.2 \\ 82.0$
0	Western Maryland1948	5,445 2,947	3,091 4,415	8,536 7,362	1.4	33,816 31,022	3,115 2,951	1,704 1,628	45.8 47.0	1,243 1,533	44.8 53.8	12,583 14,471	141 163	57.0 65.3
-	ng [Chesapeake & Ohio 1948	57,006 48,734	21,935 25,574	78,941 74,308	1.8 1.2	52,768 50,793	3,433 3,336	1,868 1,856	46.5 47.1	1,170 1,394	45.0 53.1	17,784 20,544	89 96	81.7 96.4
Poc	Se Norfolk & Western 1948	37,206 33,210	6,160 7,038	43,366 40,248	4.5	63,336 59,713	3,946 3,862	2,148 2,106	48.5 48.0	1,246 1,532	44.9 55.3	25,165 26,686	95 106	97.1 108.5
	Atlantic Coast Line1948	11,219	16,424	27,643	3.5	27,761	1.725	745	30.4	841	46.2	4,175	128	76.5
	Central of Georgia	8,580 3,004	20,498 5,183	29,078 8,187	3.9 7.2	27,137 29,969	1,791 1,662	779 779	30 0 31.2	852 827	46.8 38.2	4,407 3,897	131 131	83.0 87.1
rion	Gulf, Mobile & Ohio	1,935 3,859	6,921 10,000	8,856 13,859	3.6 1.8	29,071 54,095	1,599 2,854	754 1,340	30 9 30.5	1,035	39.7 47.8	4,030 5,284	156 79	97.9 91.4 91.2
Region	Illinois Central	2,597 21,162	14,064 29,658	16,661 50,820	1.4 1.8 1.3	52,268 43,693	2,858 2,454	1,412 1,145	32.4	1,085	46.2 48.5	6,100 8,210 8,722	55 127 136	80.1 85.0
Southern	Louisville & Nashville 1948 3	15,497 35,855	36,805 13,445	52,302 49,300 45,936	2.6 3.6	41,839 28,596	2,464 1,802	1,153 908 941	32.8 36.7	1,133 844 1,114	54.5 37.0 46.5	8.613 10,578	133 138	107.6 130.4
outh	Nash., Chatt. & St. Louis 1948	28,301 1,434 1,403	17,635 5,257 6,430	6,691 7,833	2.7 4.4	26,889 31,277 27,109	1,820	721 692	38.0 30.7 30.0	985	45.4 40.8	5,810 6.631	161 148	116.5 116.8
ďΣ	Seaboard Air Line1948	8,734 6,287	13,419 16,996	22,153 23,283	1.2	37,492 32,469	1,467 2,151 1,965	956 861	31.3 30.3	1,066 1,046	53.4 54.5	5,821 5,802	114 123	94.9 99.5
	Southern	15,171 12,388	29,994 33,288	45,165 45,676	4.8	29,658 28,456	1,755 1,703	764 760	29.1 29.0	829 929	44.5 47.5	5,880 6,596	132 147	81.1 93.7
	Chicago & North Western 1948 2	22,910	27,980	50,890	3.2	33,007	2,200	963	31.0	564	29.1	3,636	135	79.6
no	Chicago Great Western1948	1,425	35,915 4,836	52,775 6,261	2.9 4.3	30,925 48,063	2,199 3,023	1,011 1,295	31.0 28.3	588 1,294	27.8 69.4	3 858 5.460	145 122	78.7 97.5
Region		921 27,964	4,703 35,658	5,624 63,622	2.9 1.4	38,312 34,221	2,363 2,185	1,030 979	29.0 31.5	766	74.3 38.9	5,843 4,328	135 131	105.2 94.4 100.1
		9,067 1,145 775	49,349 6,768	7,913	1.6 3.9	32,556 23,383	2,159 1,821	963 828	31.4	743 709	33.4 33.4	4,628 3,536	136 128	76.1
Northwestern	Duluth, Missabe & Iron Range 1948	4,357	8,191 477 444	8,966 14,834	4.6	23,352 28,795	1,822 2,045	817 1,060	31.8	705 90 79	34.1 4.0 3.5	3,917 2,359	136 121 137	85.5 26.3 25.4
thw	Great Northern	4,648 3,097	20,801	15,092 43,898 45,876	3.3	25,625 37,232	1,901 2,369	1,002 1,066	38.8	848 900	41.7	2,106 4,289	123 121	79.2 90.9
Nor	Minneap., St P. & S. St. M 1948	7,526 6,699	28,350 8,995	45,876 15,694	$\frac{2.0}{4.9}$ $\frac{3.1}{3.1}$	37,285 34,567	2,377 1,971	1,055 885 835	31.6 30.0 30.8	810 788	$\frac{46.6}{42.2}$	4,867 2,820 2,980	106 114	111.6 120.8
1	Northern Pacific 1948 19	5,386 9,806 4,266	10,323 19,176 20,766	15,709 38,982 35,032	5.3 4.5	30,367 40,372 42,507	1,791 2,527 2,604	1,178	32.2 33.0	831 1,068	38.5 49.5	4,577 5.418	159 151	74.5 85.9
g		6,844	30,291	77.135	5.0	50.182	2,470	978	26.8	1,121	64.3	6,812	106	112.8
Region	Atch., Top. & S. Fe (incl. 1948 46 G. C. & S. F. & P. & S. F.) .1947 36 Chic., Burl. & Quincy 1948 17	6,089 7,367 5,046	38,647 23,425	74,736 40,792	5.1 3.2	47,311 50,389	2,381 2,789	1.239	26.6 31.9	1,248 1,181	69.6 61.0	7,170 5,698	112 109	119.3 83.5
	Chic., Rock I. & Pac	2,578	35,129 24,639	50,175 37,217	2.0 4.9	46,251 40,388 37,443 36,991 35,135 43,787	2,687 2,241	954	32.0 30.1	1,181 923	59.9 51.3	6,564 4,532	108 108	100.4 103.2
estern	Denver & R. G. Wn	2,578 8,453 7,597 6,563	24,639 25,589 7,179 7,166	34,042 14,776 13,729	3.3 3.9	37,443 36,991	2,128 2,315 2,115 2,733	1.166	29.7 34.2	1,108	59.6 37.0	4,959 5,744	114 188	76.7
M	Southern Pacific	6.910	35,802 43,608	62,712	4.2 3.2	35,135 43,787	2,115	1,159	34.4 28.4	1,087 1,130	42.6 59.2	6,109 8,790 9,747	189 98	91.1
Central	Union Pacific	6.946	33,062	65,062 60,008	2.5	41,590 56,561 50,711	2,640 2,687	1,130	28.4 30.7	1,130 1,216 1,474	62.8 73.7 75.8	9.127	105 125	106.0 108.3
Cen	Western Pacific	4,199 2,269 2,250	39,980 2,407 3,000	64,179 4,676	2.8 8.2 5.8	55,705	2,593 2,716	1,193	31.8 28.2	1,566 1,831 1,769	86.4	10,418 7,152 8,369	134 59	123.9 70.1
	International-Gt. Northern*1948	438	6.765	5,250 7,203	1.0	55,541 41,362	2,696 2,266	1,033	28.4 32.3	923	81.6 44.5	6,132	60 82	79.3 99.2
n	Kansas City Southern 1948	349 1,469	7,207 6,222	7,556 7,691	3.8	32,929 65,676	1,828 3,386	804 1,631	31.0 34.1	933 1,422	46.9 62.6	6,176 11,676	107 101	109.3 126.9
Region	MoKansTexas Lines1948	1,020 2,515	5,263 7,899 8,771	6,283 10,414	2.9	58,756 39,683	2,971 2,149	1,397 936	31.7 31.3	1,355 1,741	63.2 95.2	10,240 5,848	113 91	123.3 144.9
	Missouri Pacific* 1947	1,548 5,580	22,104	10,319 37,684	1.7	39,691 44,594 42,166	2,096 2,311	912 1,003	28.6 31.0	1,668 1,222	90.2	4,456 6,844	95 105	111.1 114.2
western	Texas & Pacific	5,687 2,351	6,972	37,461 9,323	1.7 2.7	43,750	2,309 2,295	951	31.0 28.5	1,396 1,431	71.8	7,423 7,599	107 93	115.6 139.2
hwe	St. Louis-San Francisco 1948 9	1,609 9,239	13,198	10,765 22,437	1.8 2.0	39,135 37,856	2,182 1,949	850	29.5 31.0	1,493 1,058	82.2 54.8	8,941 4,873	130	156.1 84.0
South	St. Louis Southw. Lines1948	1,732	14,105 5,421 4,995	19,533 7,153	1.8 1.9	33,554 42,969	1,698 2,370	1.059	30.8 28.5	1,161 1,911	56.4 97.1	5,025 8,929	83	102.6 137.9
-	Texas & New Orleans1948 4	1,172 1,644	16,728	6,167 $21,372$	2.5 3.2	37,793	2,333 1,957	1,043 863	26.7 30.4	1,209	104.6 60.0	8,661 5,855	85	136,9 125.8
-		3,331	14,654	17,985	2.4	35,671	1,796	820	29.4	1,357	62.9	6,020	94	140.4
*Ke	eport of trustee or trustees.													

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Current Publications

PAMPHLETS

What Good are Standards? Published by the American Standards Association, Inc., 70 E. 45th st., New York 17. Price, to members, 75 cents; to non-members, \$1.

The papers which comprise this pamphlet were presented at the 1948 annual meeting of the American Standards Association and include discussions of such problems as the legality of standardization, the standardization work of the Munitions Board, and the functions of standardization in such company operations as purchasing, manufacturing and marketing. The importance of standardization to wholesalers and retailers, and to the ultimate consumer, as well as to manufacturers, is taken up by authorities in each field.

Materials in the National Archives Relating to Transportation. 40 pages. Published by the National Archives, Washington 25, D. C. Free.

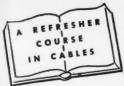
Identified as Reference Information Circular No. 36, 1948, this pamphlet lists materials in the National Archives which relate to transportation. Unlike an earlier circular issued in 1943, the present one is not restricted to transportation within North America, but includes transportation to and from the United States and transportation abroad where material on this topic occurs (usually in diplomatic and military records). Its time span is that of United States history and it includes the topic of military transportation.

Quiz on Railroads and Railroading. 64 pages, illustrations. Published by the Association of American Railroads, Transportation Building, Washington 6, D. C. Free.

This, the seventh edition of "Quiz," provides in ready and convenient form answers to 268 questions frequently asked about American railroads, their history, physical properties, operations and accomplishments, and the roles they play as transportation agencies, fields of investment, employers, purchasers of products of industry, and taxpayers. This is a very valuable booklet; no one who has to answer questions about railroads should be without it.

List of Multilateral Conventions, Agreements, etc., Relating to Transport and Communications Questions. 92 pages. Published by the Department of Economic Affairs, Division of Transport and Communications, United Nations, Lake Success, N. Y. 75 cents.

The principal multilateral international obligations dealing with this subject are listed in this document and classified according to the main branches of transport and communications. The publication is the result of research and analysis both of the documents issued by the League of Na-



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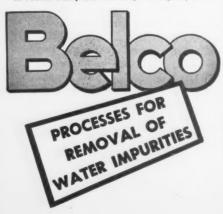
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tions and the general documentation of the Secretariat of the United Nations. It is based, in addition, on information given by governments of many members of the United Nations and by various intergovernmental and international institutions. It includes a comprehensive list of conventions and agreements concerning transport and communications concluded during the period between the two world wars under the auspices of the League of Nations and a list of articles relating to this subject embodied in peace treaties concluded after World War II between the Allied and associated powers and Italy, Bulgaria, Hungary, Rumania and Finland.

You and Your Railroads. 23 pages, charts, drawings. Published by the Association of American Railroads, Transporta-tion Building, Washington 6, D. C. Free.

An interesting and informative booklet highlighting railroad activities in general. Included are data on what the railroads hauled in 1947 and what it cost; what travel by train cost; what the railroads paid out for wages, fuel, materials and supplies; railroad taxes and how the money is used; railroad investment and who profits from it, i.e., (1) the public, and (2) railroad employees; why a fair return of 6 per cent is needed, and why investors need some return on their investment.

Selected Income and Balance-Sheet Items of Class I Steam Railways in the United States

Compiled from 127 reports (Form 1BS) representing 131 steam railways. (SWITCHING AND TERMINAL COMPANIES NOT INCLUDED)

United States

Income Items	For month of 1948	December 1947	For the twelv 1948	e months of 1947
Net railway operating income Other income Total income	\$64,661,934 38,696,341 103,358,275	46,859,852	\$1,002,352,317 235,090,113 1,237,442,430	\$780,438,282 229,320,569 1,009,758,851
 4. Miscellaneous deductions from income 5. Income available for fixed charges 6. Fixed charges: 6-01. Rent for leased roads and 	5,919,013 97,439,262	5,963,658 117,565,290	64,835,800 1,172,606,630	45,017,227 964,741,624
equipment. 6-02. Interest deductions. 6-03. Other deductions. 6-04. Total fixed charges. 7. Income after fixed charges.	9,635,435 23,853,506 528,500 34,017,441 63,421,821 13,531,824	10,926,432 25,864,144 391,495 37,182,071 80,383,219 7,600,554	130,170,508 290,757,352 2,305,075 423,232,935 749,373,695 49,361,186	123,212,470 310,067,488 2,067,453 435,347,411 529,394,213 39,023,203
9. Net income	49,889,997	72,782,665	700,012,509	490,371,010
Depreciation (Way and Structures and Equipment). Amortization of defense projects Pederal income taxes. Dividend appropriations:	32,848,365 1,158,622 33,649,024	29,654,285 1,420,890 23,908,620	375,617,262 16,568,904 448,300,724	352,759,659 16,208,433 297,676,399
13-01. On common stock 13-02. On preferred stock Ratio of income to fixed charges	28,854,228 10,256,958	20,496,866 9,105,346	219,761,709 69,244,804	181,706,350 54,759,213
(Item 5 ÷6-04)	2.86	3.16	2.77	2.22
Selected Expenditure and Asset	Items		United Balance at end 1948	
17. Expenditures (gross) for additions and 18. Expenditures (gross) for additions and 19. Investments in stocks, bonds, etc., ot	betterments—]	Equipment	\$344,928,638 920,940,908	\$289,572,777 571,269,504
companies (Total, Account 707) 20. Other unadjusted debits			518,496,172 123,018,294	583,860,983 183,833,181
21. Cash. 22. Temporary cash investments. 23. Special deposits. 24. Loans and bills receivable. 25. Traffic and car-service balances—Dr. 26. Net balance receivable from agents and 27. Miscellaneous accounts receivable. 28. Materials and supplies. 29. Interest and dividends receivable. 30. Accrued accounts receivable. 31. Other current assets.	i conductors		900,662,891 1,046,383,462 121,743,524 6,048,021 55,327,330 122,612,978 346,534,080 855,112,247 17,194,665 165,424,994 38,775,193	945,619,152 967,127,954 136,115,110 12,697,084 56,874,275 134,908,571 333,045,633 757,990,501 16,060,614 179,085,464 39,492,544
32. Total current assets (items 21 to 3	1)		3,675,819,385	3,579,016,902
Selected Liability Items 40. Funded debt maturing within 6 month 41. Loans and bills payable ³ . 42. Traffic and car-service balances—Cr. 43. Audited accounts and wages payable. 44. Miscellaneous accounts payable. 45. Interest matured unpaid. 46. Dividends matured unpaid. 47. Unmatured interest accrued. 48. Unmatured dividends declared. 49. Accrued accounts payable. 50. Taxes accrued. 51. Other current liabilities.			\$198,549,463 4,341,352 87,226,948 504,332,128 233,467,981 56,411,838 25,476,824 71,224,804 26,460,678 214,240,673 755,894,369 86,850,527	\$126,525,769 4,755,000 105,798,054 511,276,017 233,478,809 67,369,312 25,116,656 64,449,708 20,430,086 181,908,017 638,638,658 97,543,266
52. Total current liabilities (items 41 t	0 51)		2,065,928,122	1,950,763,583
53. Analysis of taxes accrued: 53-01. U. S. Government taxes 53-02. Other than U. S. Government 54. Other unadjusted credits	taxes		627,919,714 127,974,655 276,158,563	521,287,983 117,350,675 335,807,755

Represents accruals, including the amount in default.

Represents accruals, including the amount in default.

Includes payments of principal of long-term debt (other than long-term debt in default) which becomes due within six months after close of month of report.

Includes obligations which mature not more than one year after date of issue.

Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission.

Subject to revision.

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